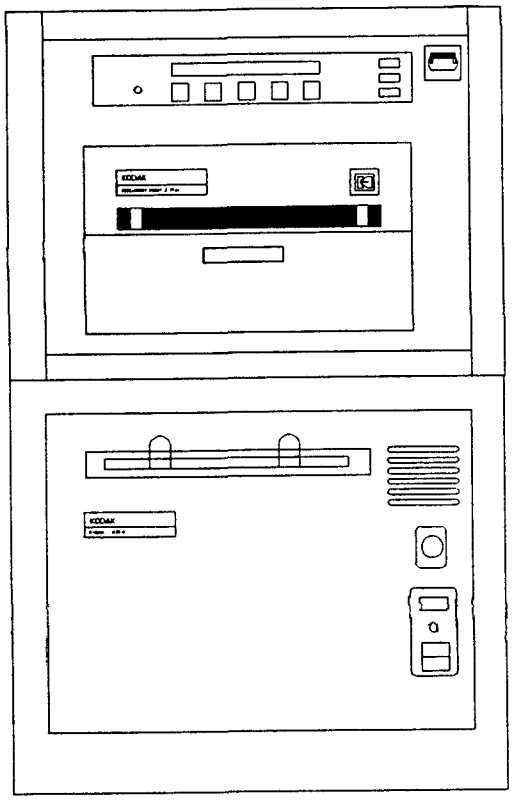
Publication No. WD 3239
January 1993

DIAGRAM PACKAGE

for the

Kodak MINILOADER 2 PLUS



Use this Publication for:-
MINILOADER 2 Plus Model Stand-alone (SV code 3236), MINILOADER 2 Plus Model M35-M (SV code 3239) and MINILOADER 2 Plus Model 480RA (SV code 3240).

HEALTH SCIENCES DIVISION

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CAUTION

This equipment includes parts and assemblies sensitive to damage from electrostatic discharge. Use caution to prevent damage during all service procedures.

PLEASE NOTE

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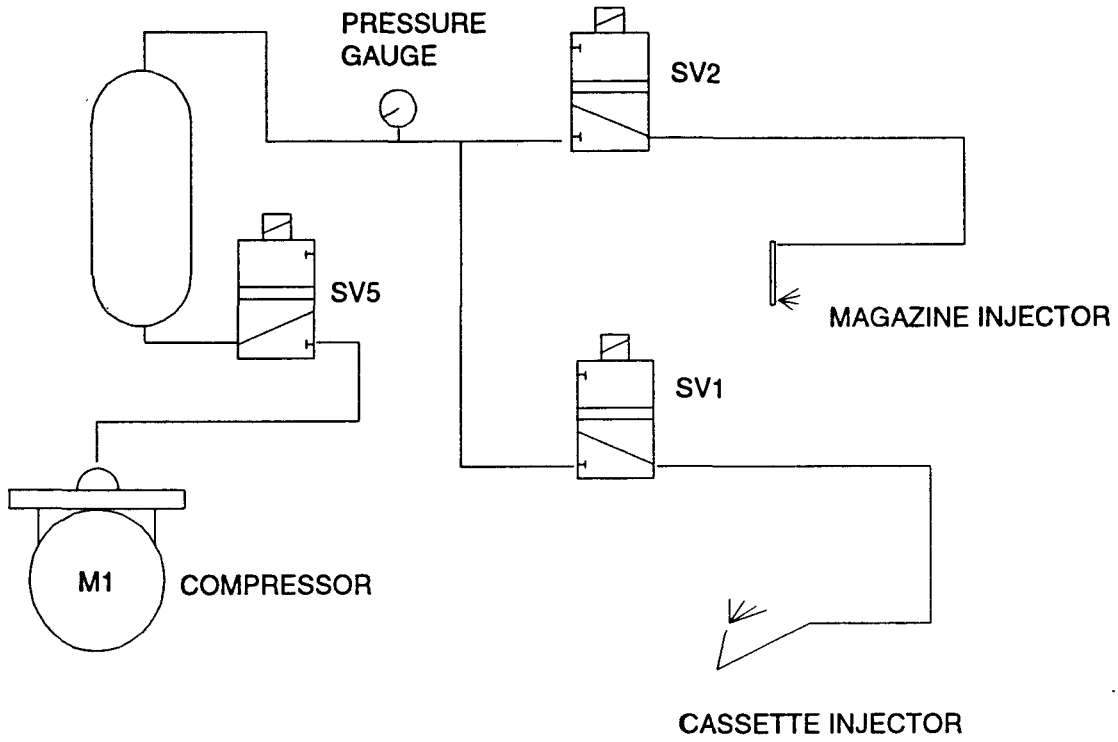
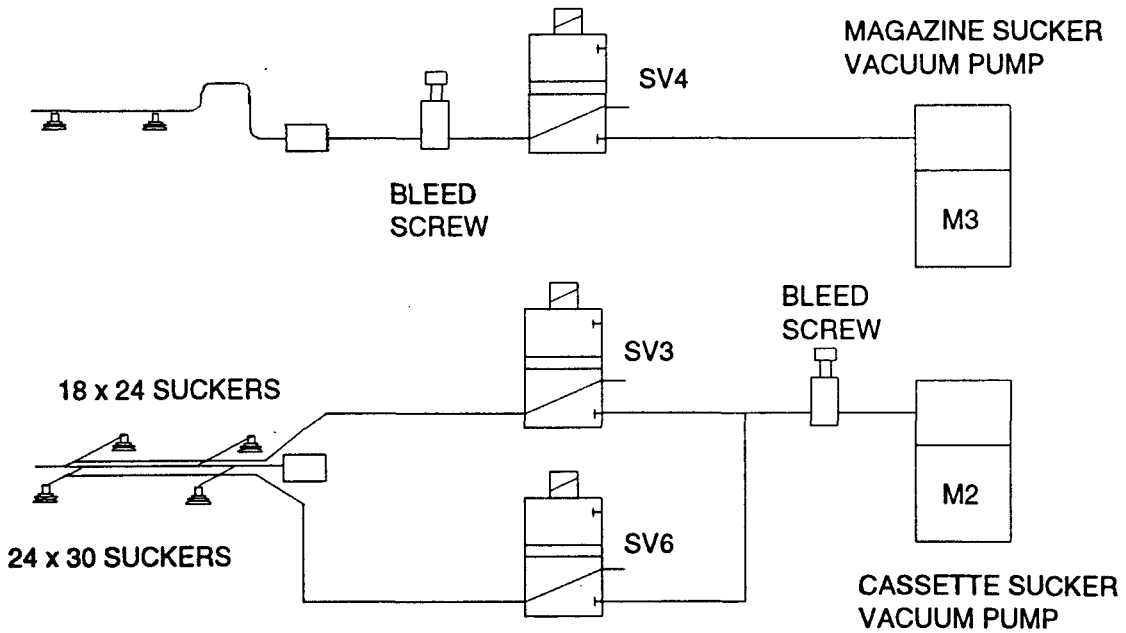
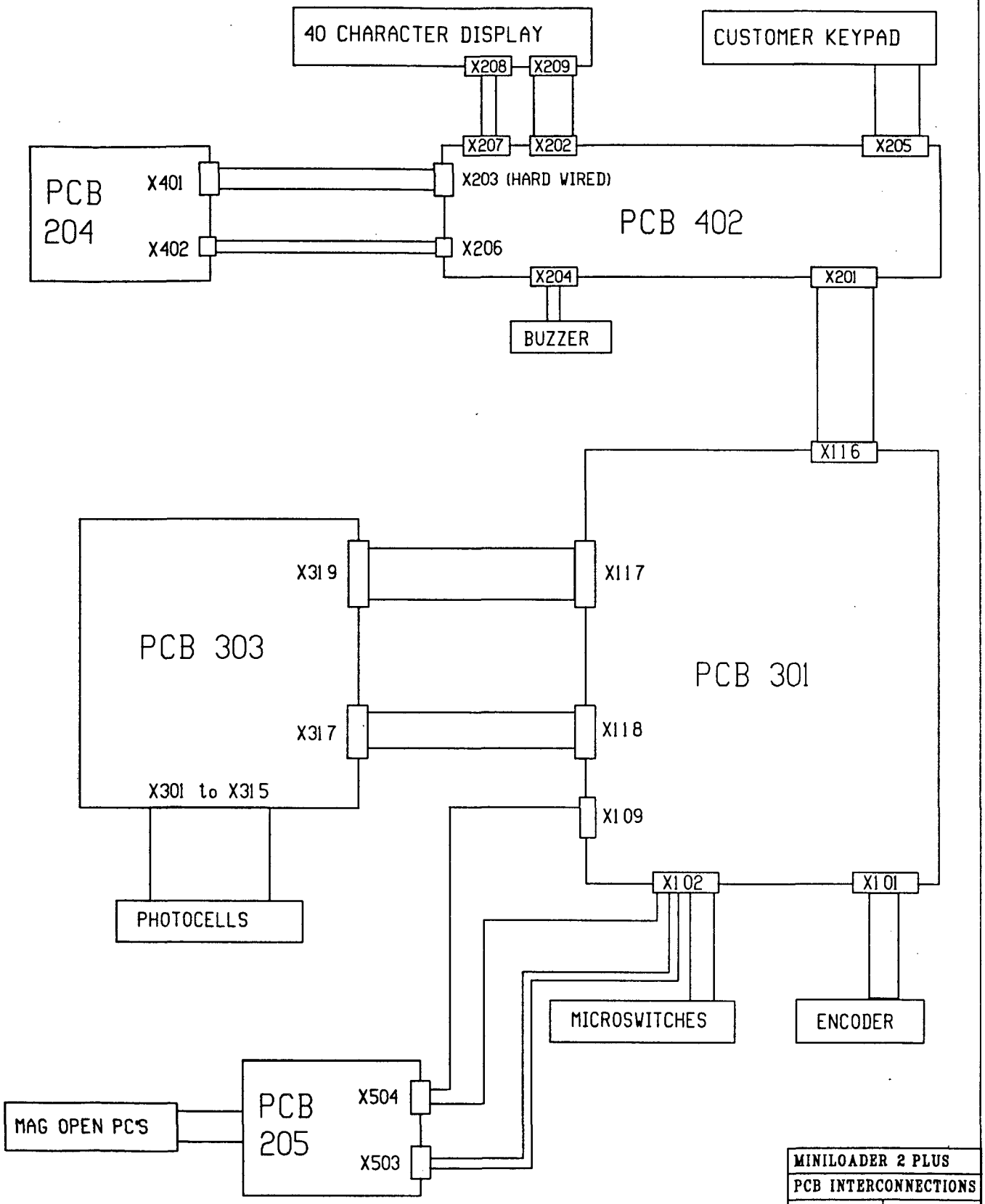


PRESSURE SYSTEM

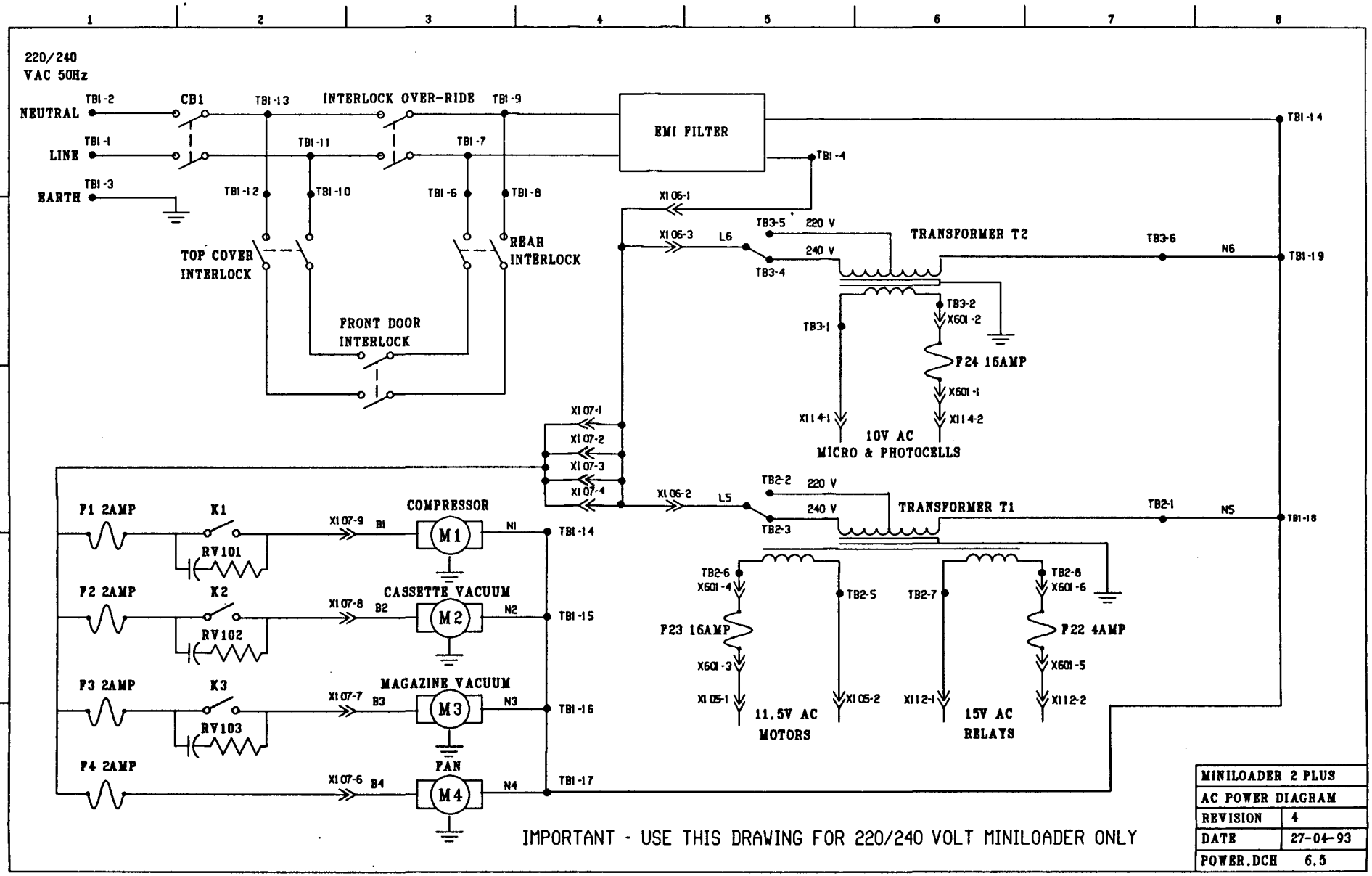


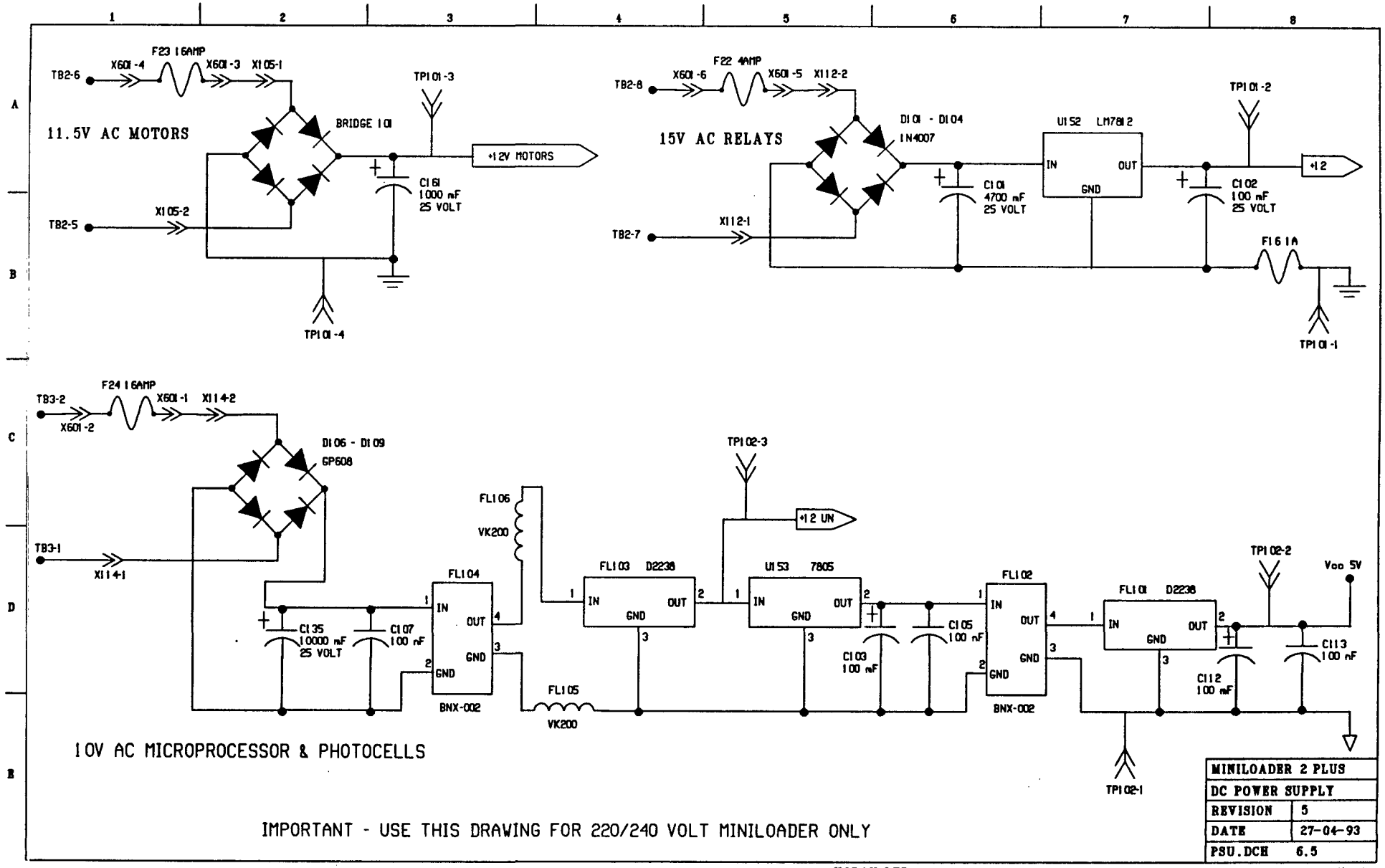
VACUUM SYSTEM

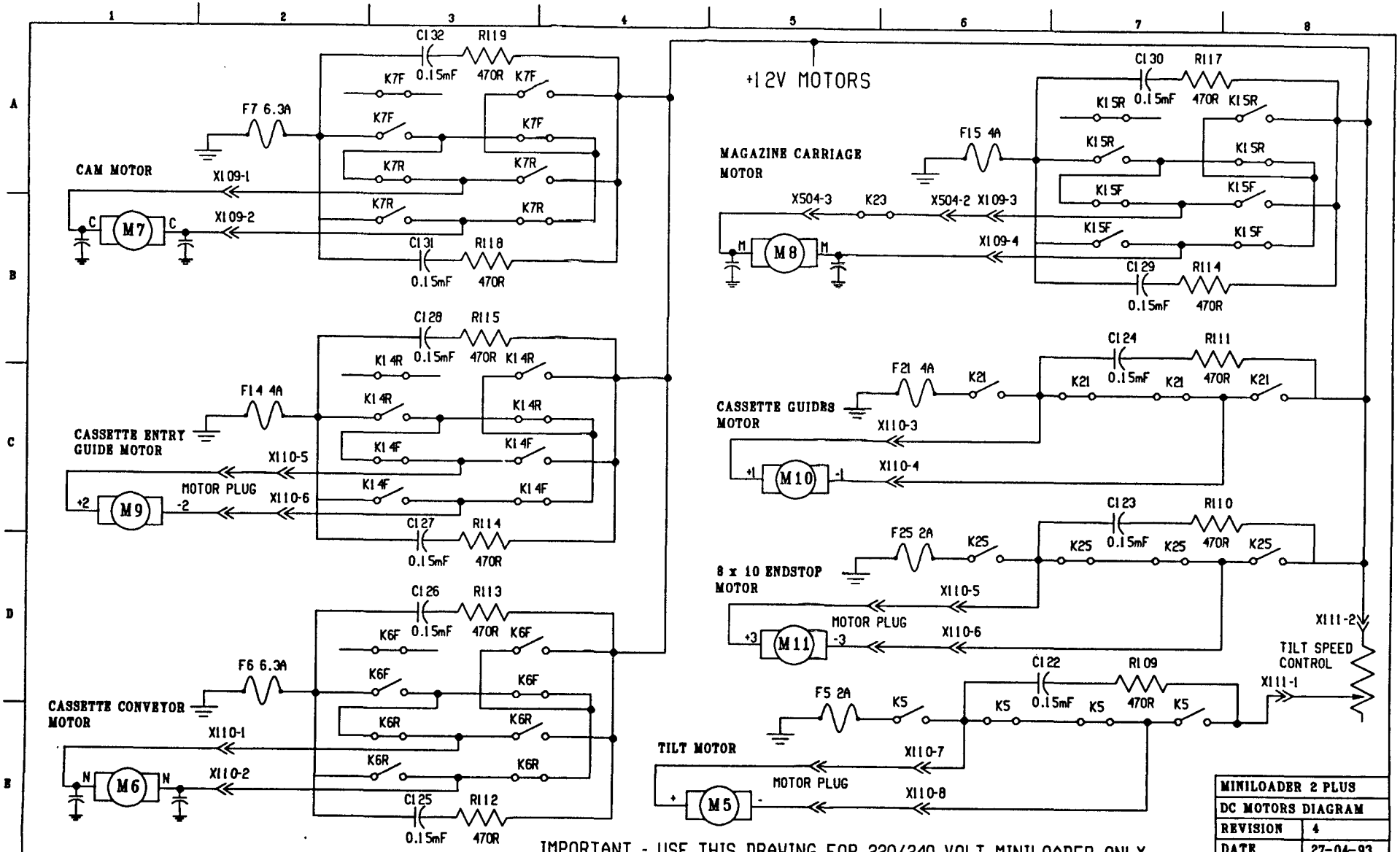
MINILOADER 2 PLUS	
PNEUMATIC DIAGRAM	
REVISION	2
DATE	27-04-93
PNEUMAT.DCH 7.5	

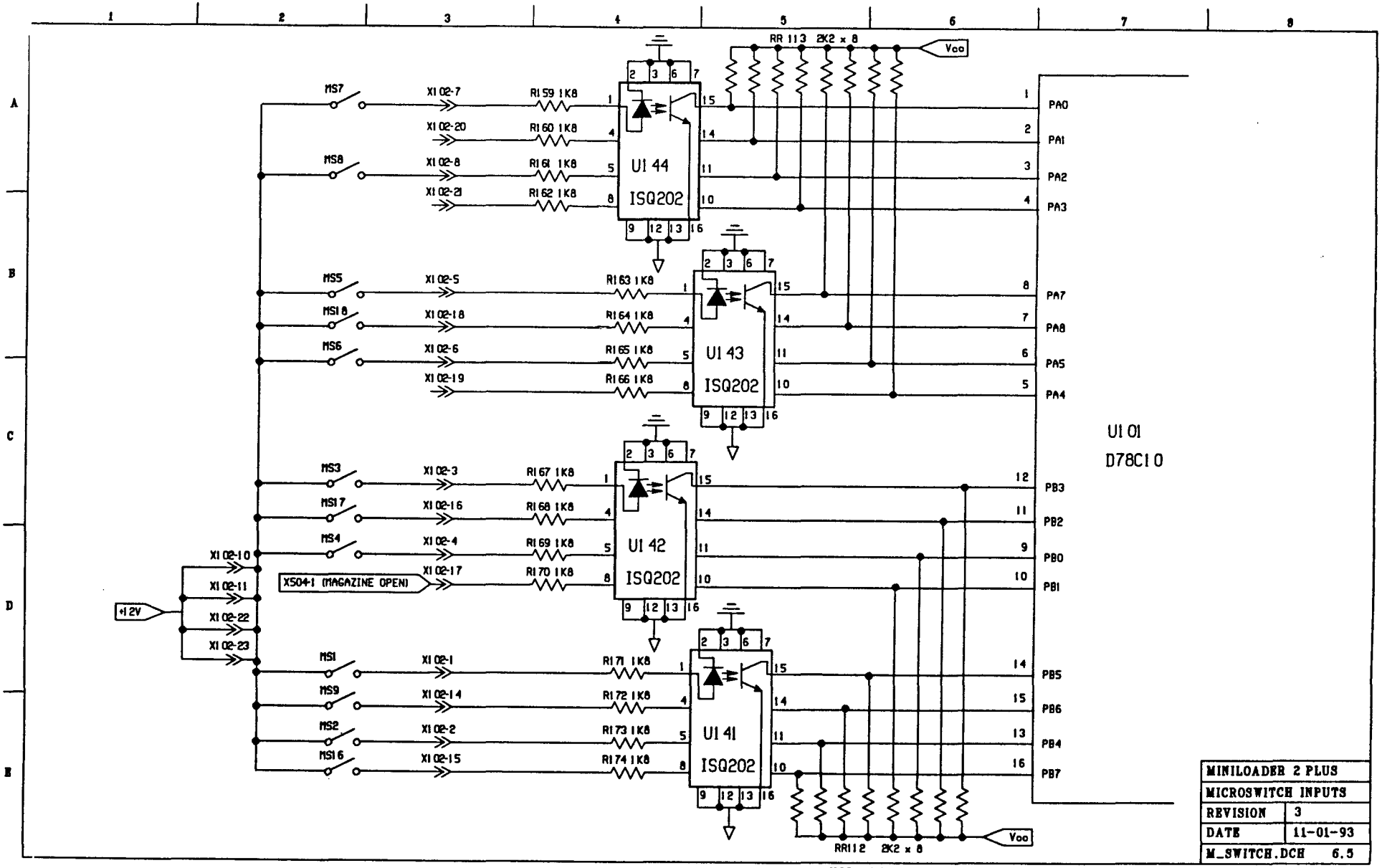


MINILOADER 2 PLUS	
PCB INTERCONNECTIONS	
REVISION	3
DATE	29-01-93
PCB_LAY.DCH	7.5

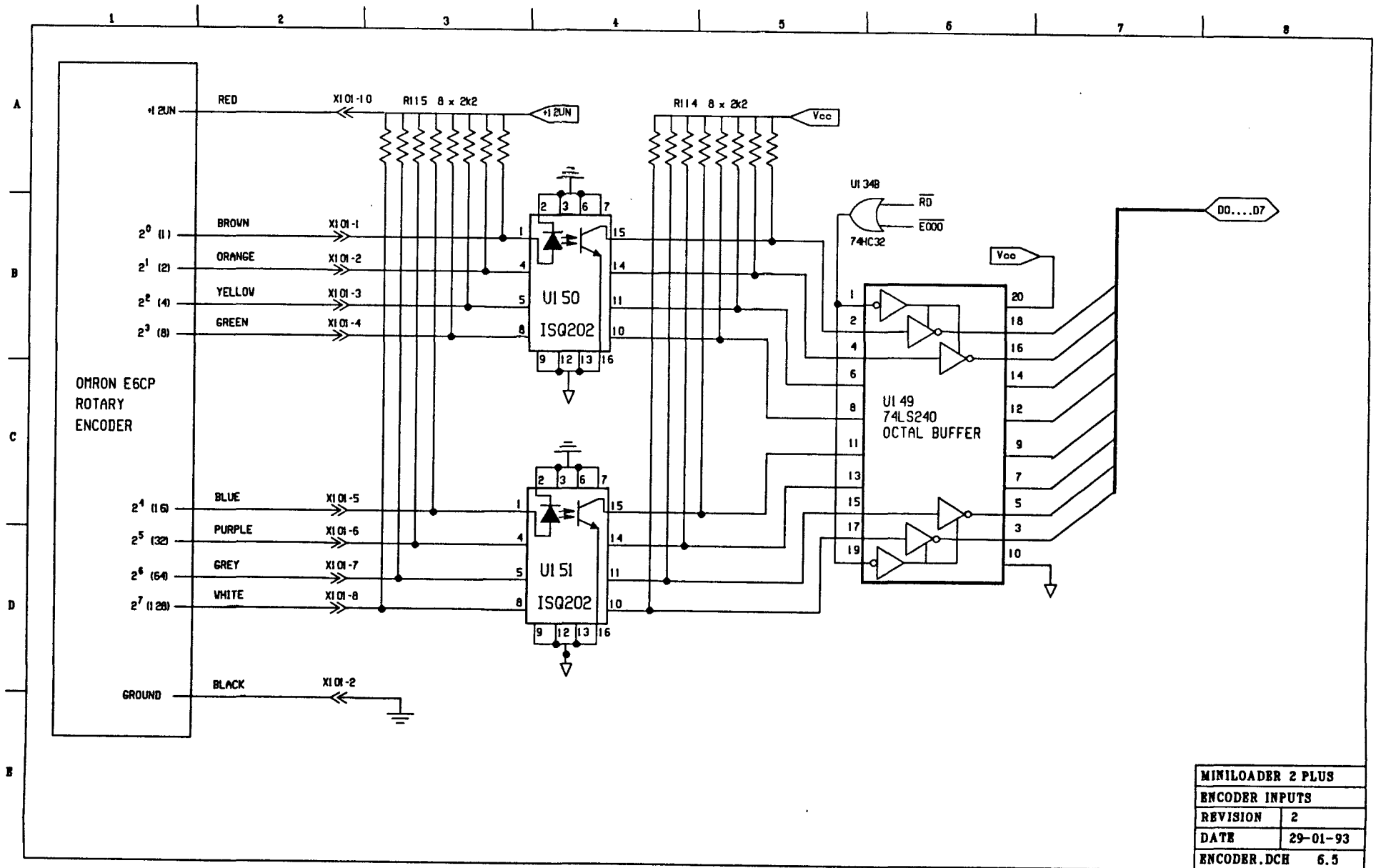

220/240
VAC 50Hz
NEUTRAL
LINE
EARTH
TB1-2
TB1-1
TB1-3
CB1
TB1-13
TB1-11
TB1-12
TB1-10
INTERLOCK OVER-RIDE
TB1-9
TB1-7
TB1-6
TB1-8
EMI FILTER
TB1-14
TB1-4
X106-1
X106-3
L6
TB3-5
220 V
240 V
TB3-4
TRANSFORMER T2
TB3-6
N6
TB1-19
TB3-2
TB3-1
X601-2
F24 16AMP
X601-1
X114-1
X114-2
10V AC
MICRO & PHOTOCELLS
TOP COVER
INTERLOCK
REAR
INTERLOCK
FRONT DOOR
INTERLOCK
X107-1
X107-2
X107-3
X107-4
X106-2
L5
TB2-2
220 V
240 V
TB2-3
TRANSFORMER T1
TB2-1
N5
TB1-18
F1 2AMP
K1
RV101
X107-9
B1
COMPRESSOR
M1
N1
TB1-14
F2 2AMP
K2
RV102
X107-8
B2
CASSETTE VACUUM
M2
N2
TB1-15
F3 2AMP
K3
RV103
X107-7
B3
MAGAZINE VACUUM
M3
N3
TB1-16
F4 2AMP
X107-6
B4
FAN
M4
N4
TB1-17
TB2-6
X601-4
F23 16AMP
X601-3
X105-1
TB2-5
X105-2
11.5V AC
MOTORS
TB2-7
X112-1
TB2-8
X601-6
F22 4AMP
X601-5
X112-2
15V AC
RELAYS
IMPORTANT - USE THIS DRAWING FOR 220/240 VOLT MINILOADER ONLY
MINILOADER 2 PLUS
AC POWER DIAGRAM
REVISION 4
DATE 27-04-93
POWER.DCH 6.5


1
2
3
4
5
6
7
8
A
B
C
D
E
F23 16AMP
X601-4
X601-3
X105-1
TB2-6
TB2-5
X105-2
11.5V AC MOTORS
BRIDGE 101
TP101-3
TP101-4
C161
1000 mF
25 VOLT
+12V MOTORS
F22 4AMP
X601-6
X601-5
X112-2
TB2-8
TB2-7
X112-1
15V AC RELAYS
D101 - D104
IN4007
U152 LM7812
IN
OUT
GND
C101
4700 mF
25 VOLT
C102
100 mF
25 VOLT
TP101-2
+12
F161A
TP101-1
F24 16AMP
TB3-2
X601-2
X601-1
X114-2
TB3-1
X114-1
D106 - D109
GP608
FL106
VK200
FL104
BNX-002
C135
10000 mF
25 VOLT
C107
100 nF
FL105
VK200
FL103 D2238
U153 7805
TP102-3
+12 UN
C103
100 nF
C105
100 nF
FL102
BNX-002
FL101 D2238
C112
100 nF
C113
100 nF
TP102-2
Voo 5V
TP102-1
10V AC MICROPROCESSOR & PHOTOCELLS
IMPORTANT - USE THIS DRAWING FOR 220/240 VOLT MINILOADER ONLY
MINILOADER 2 PLUS
DC POWER SUPPLY
REVISION 5
DATE 27-04-93
PSU.DCH 6.5

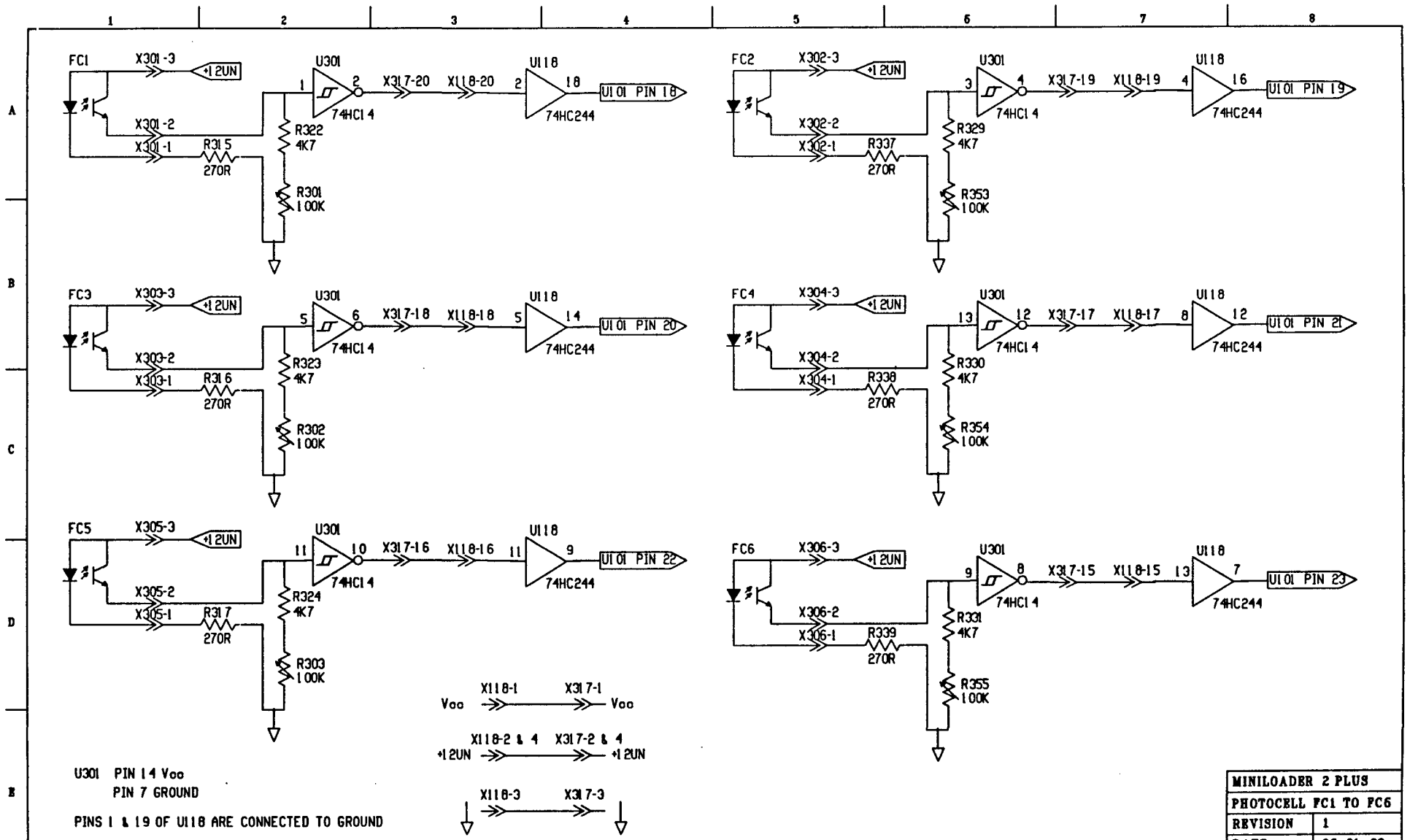

+12V MOTORS
CAM MOTOR
M7
F7 6.3A
X109-1
X109-2
C132 0.15mF
R119 470R
C131 0.15mF
R118 470R
K7F
K7R
CASSETTE ENTRY GUIDE MOTOR
M9
F14 4A
X110-5
X110-6
MOTOR PLUG
+2
-2
C128 0.15mF
R115 470R
C127 0.15mF
R114 470R
K14R
K14F
CASSETTE CONVEYOR MOTOR
M6
F6 6.3A
X110-1
X110-2
C126 0.15mF
R113 470R
C125 0.15mF
R112 470R
K6F
K6R
MAGAZINE CARRIAGE MOTOR
M8
F15 4A
X504-3
K23
X504-2
X109-3
X109-4
C130 0.15mF
R117 470R
C129 0.15mF
R114 470R
K15R
K15F
CASSETTE GUIDES MOTOR
M10
F21 4A
X110-3
X110-4
C124 0.15mF
R111 470R
K21
8 x 10 ENDSTOP MOTOR
M11
F25 2A
X110-5
X110-6
MOTOR PLUG
+3
-3
C123 0.15mF
R110 470R
K25
TILT MOTOR
M5
F5 2A
X110-7
X110-8
MOTOR PLUG
C122 0.15mF
R109 470R
K5
X111-2
X111-1
TILT SPEED CONTROL
IMPORTANT - USE THIS DRAWING FOR 220/240 VOLT MINILOADER ONLY
MINILOADER 2 PLUS
DC MOTORS DIAGRAM
REVISION 4
DATE 27-04-93
MOTORS.DCH 6.5



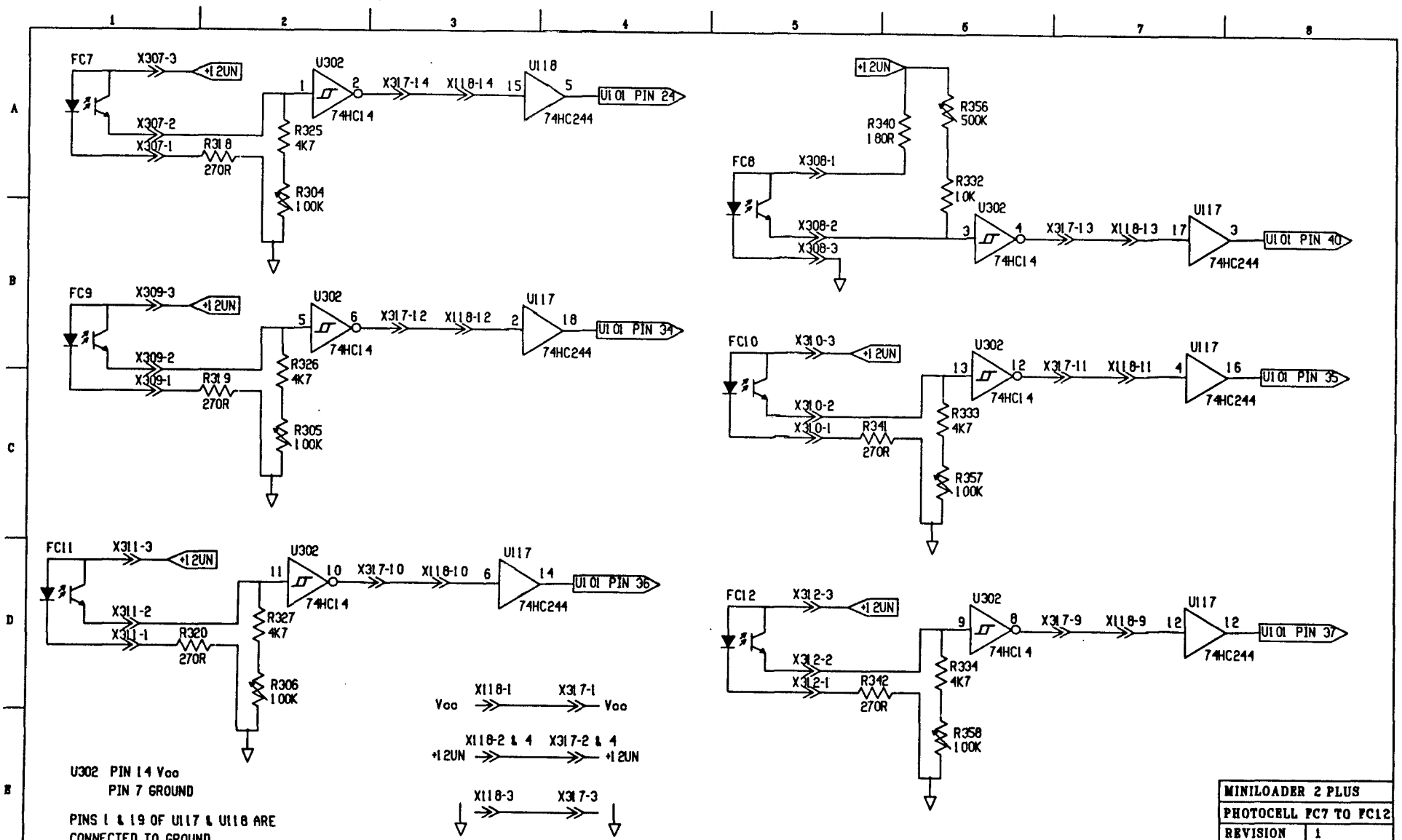
MINILOADER 2 PLUS	
MICROSWITCH INPUTS	
REVISION	3
DATE	11-01-93
M_SWITCH.DCH	6.5

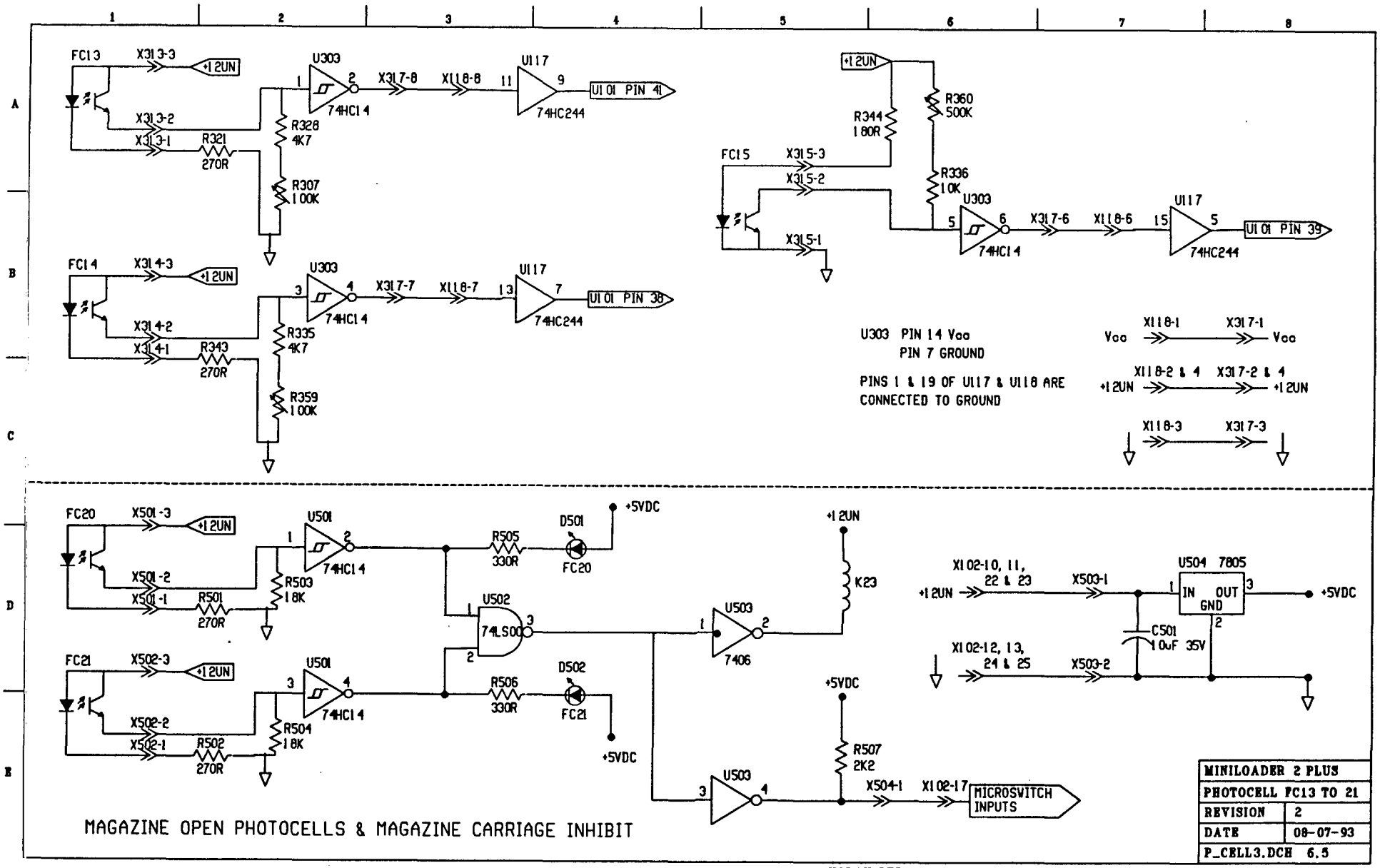


MINILOADER 2 PLUS	
ENCODER INPUTS	
REVISION	2
DATE	29-01-93
ENCODER.DCH	6.5

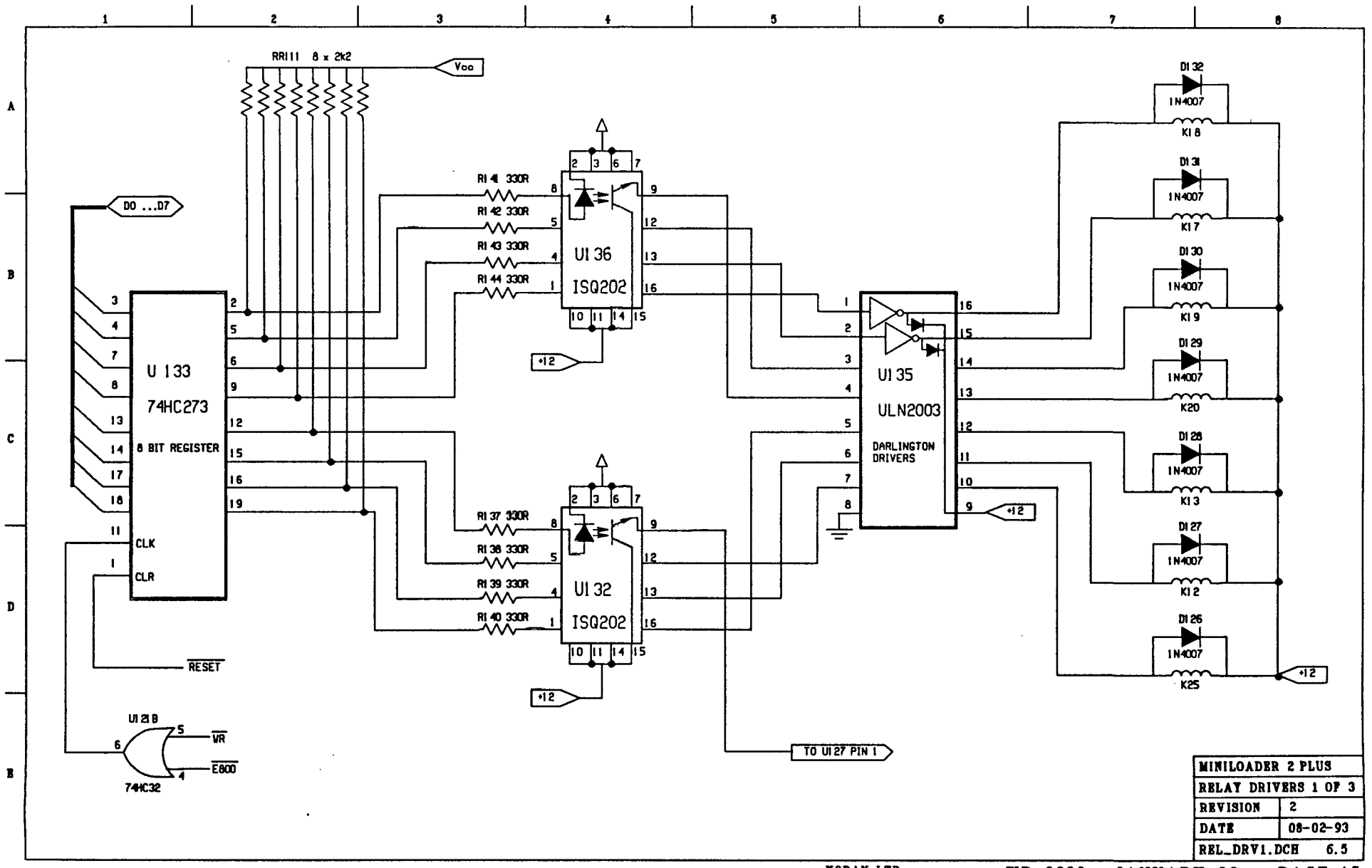


MINILOADER 2 PLUS	
PHOTOCELL FC1 TO FC6	
REVISION	1
DATE	06-01-93
P_CELL1.DCH	6.5

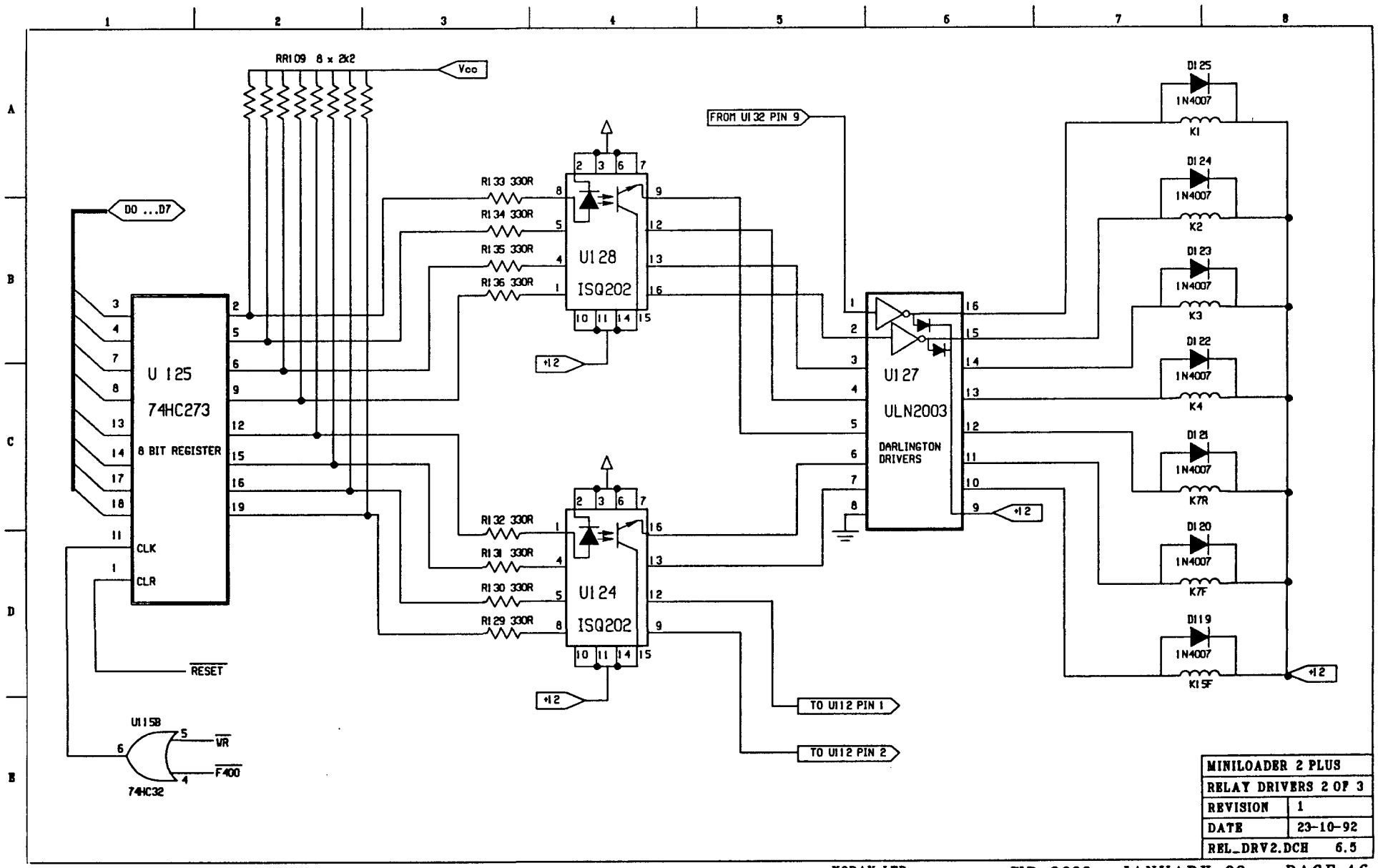

FC7
X307-3
+12UN
X307-2
X307-1
R318
270R
U302
74HC14
R325
4K7
R304
100K
X317-14
X118-14
U118
74HC244
U101 PIN 24
FC8
X308-1
X308-2
X308-3
+12UN
R340
180R
R356
500K
R332
10K
U302
74HC14
X317-13
X118-13
U117
74HC244
U101 PIN 40
FC9
X309-3
+12UN
X309-2
X309-1
R319
270R
U302
74HC14
R326
4K7
R305
100K
X317-12
X118-12
U117
74HC244
U101 PIN 34
FC10
X310-3
+12UN
X310-2
X310-1
R341
270R
U302
74HC14
R333
4K7
R357
100K
X317-11
X118-11
U117
74HC244
U101 PIN 35
FC11
X311-3
+12UN
X311-2
X311-1
R320
270R
U302
74HC14
R327
4K7
R306
100K
X317-10
X118-10
U117
74HC244
U101 PIN 36
FC12
X312-3
+12UN
X312-2
X312-1
R342
270R
U302
74HC14
R334
4K7
R358
100K
X317-9
X118-9
U117
74HC244
U101 PIN 37
X118-1
X317-1
Vcc
Vcc
X118-2 & 4
X317-2 & 4
+12UN
+12UN
X118-3
X317-3
U302 PIN 14 Vcc
PIN 7 GROUND
PINS 1 & 19 OF U117 & U118 ARE
CONNECTED TO GROUND
MINILOADER 2 PLUS
PHOTOCELL FC7 TO FC12
REVISION 1
DATE 07-01-93
P_CELL2.DCH 6.5



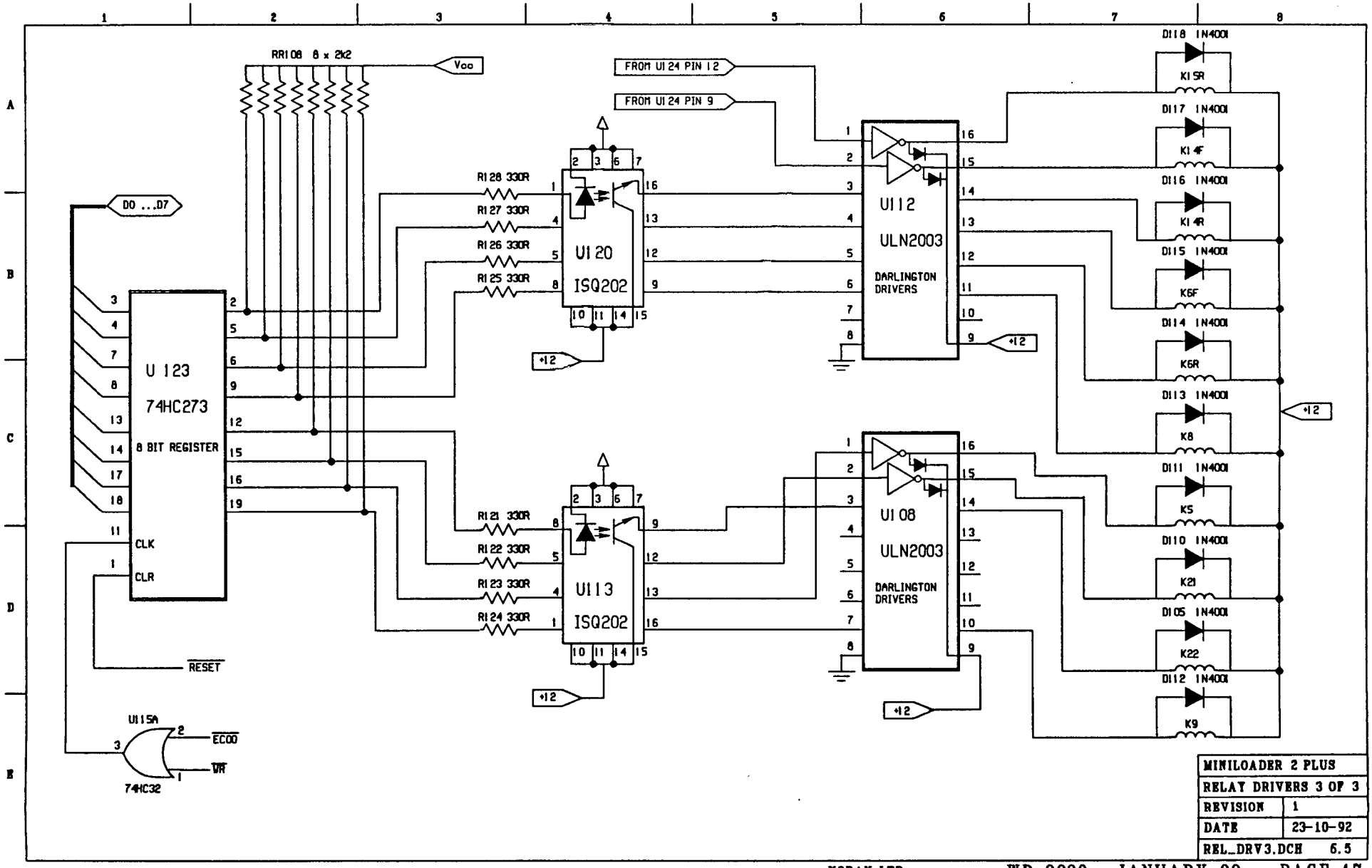
MINILOADER 2 PLUS	
PHOTOCELL FC13 TO 21	
REVISION	2
DATE	08-07-93
P_CELL3.DCH	6.5



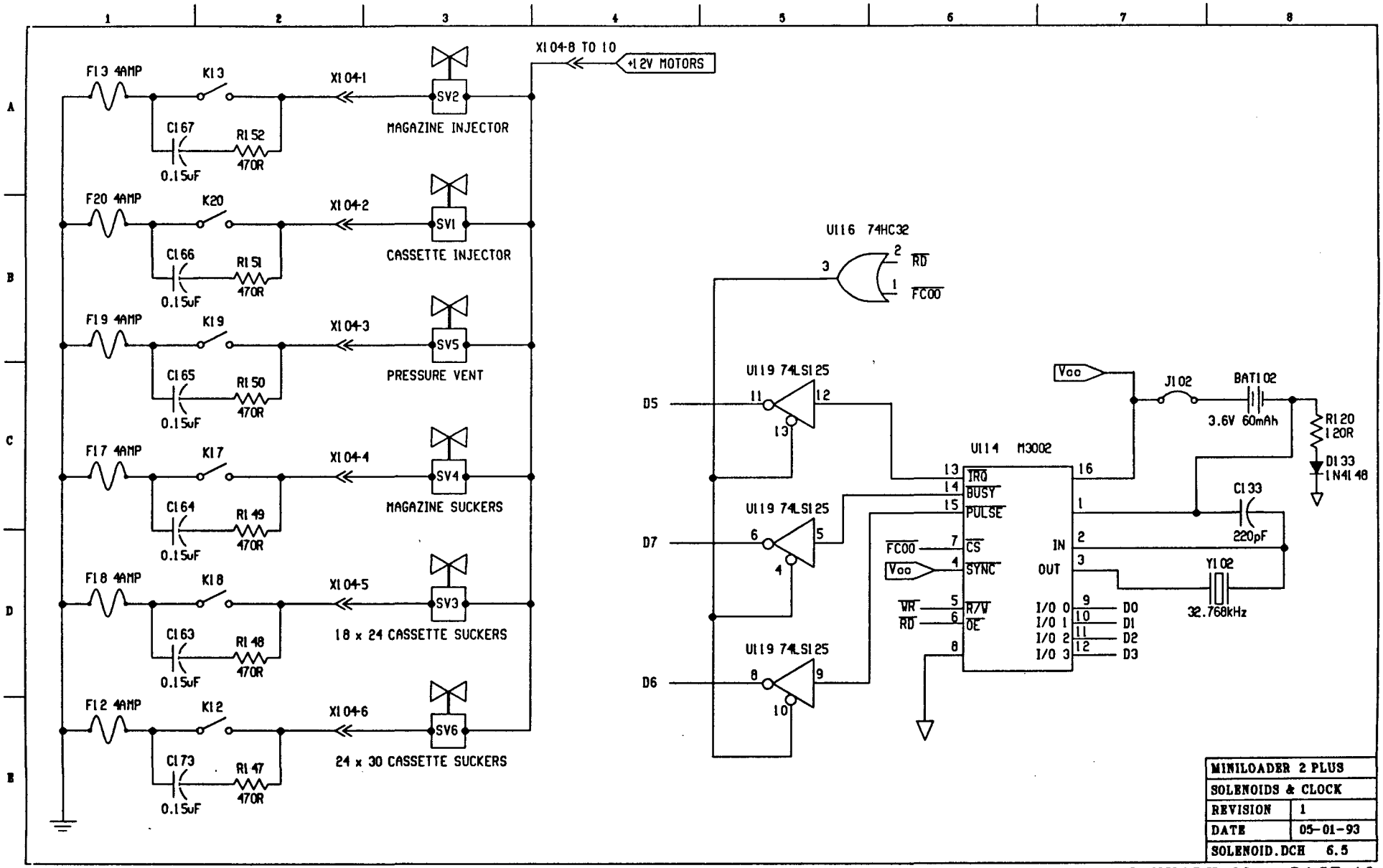
MINILOADER 2 PLUS	
RELAY DRIVERS 1 OF 3	
REVISION	2
DATE	08-02-93
REL_DRV1.DCH	6.5



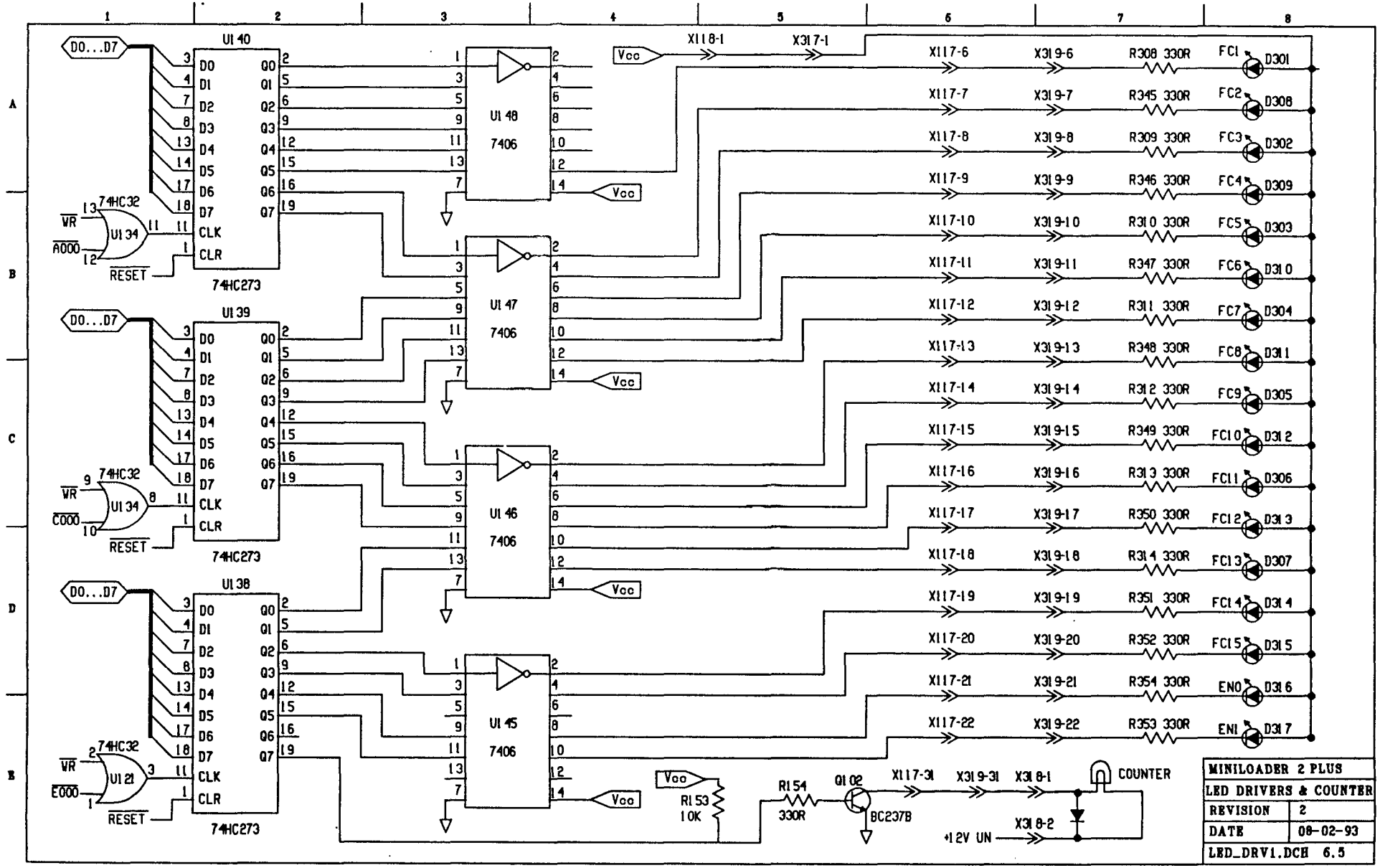
MINILOADER 2 PLUS	
RELAY DRIVERS 2 OF 3	
REVISION	1
DATE	23-10-92
REL_DRV2.DCH	6.5

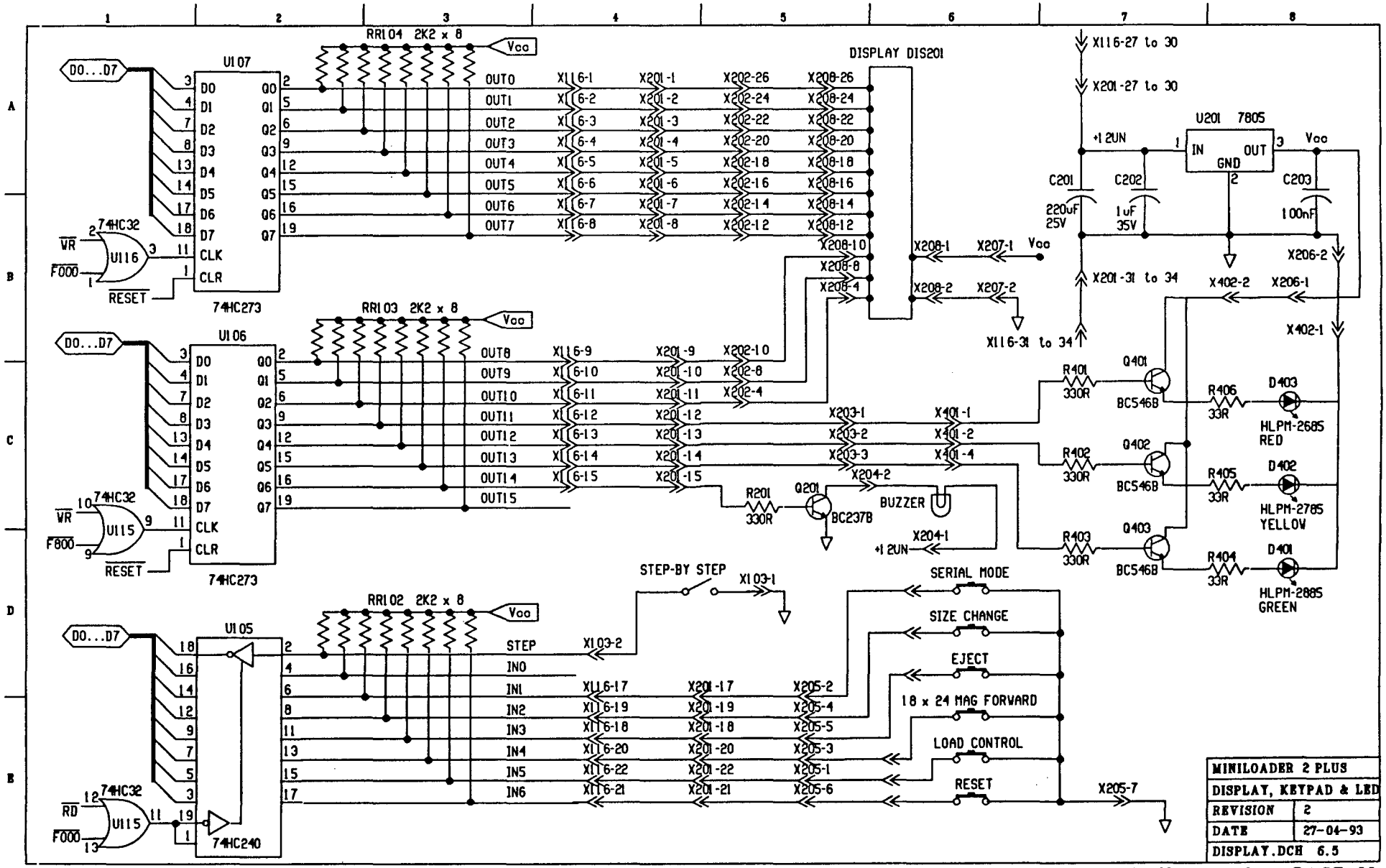


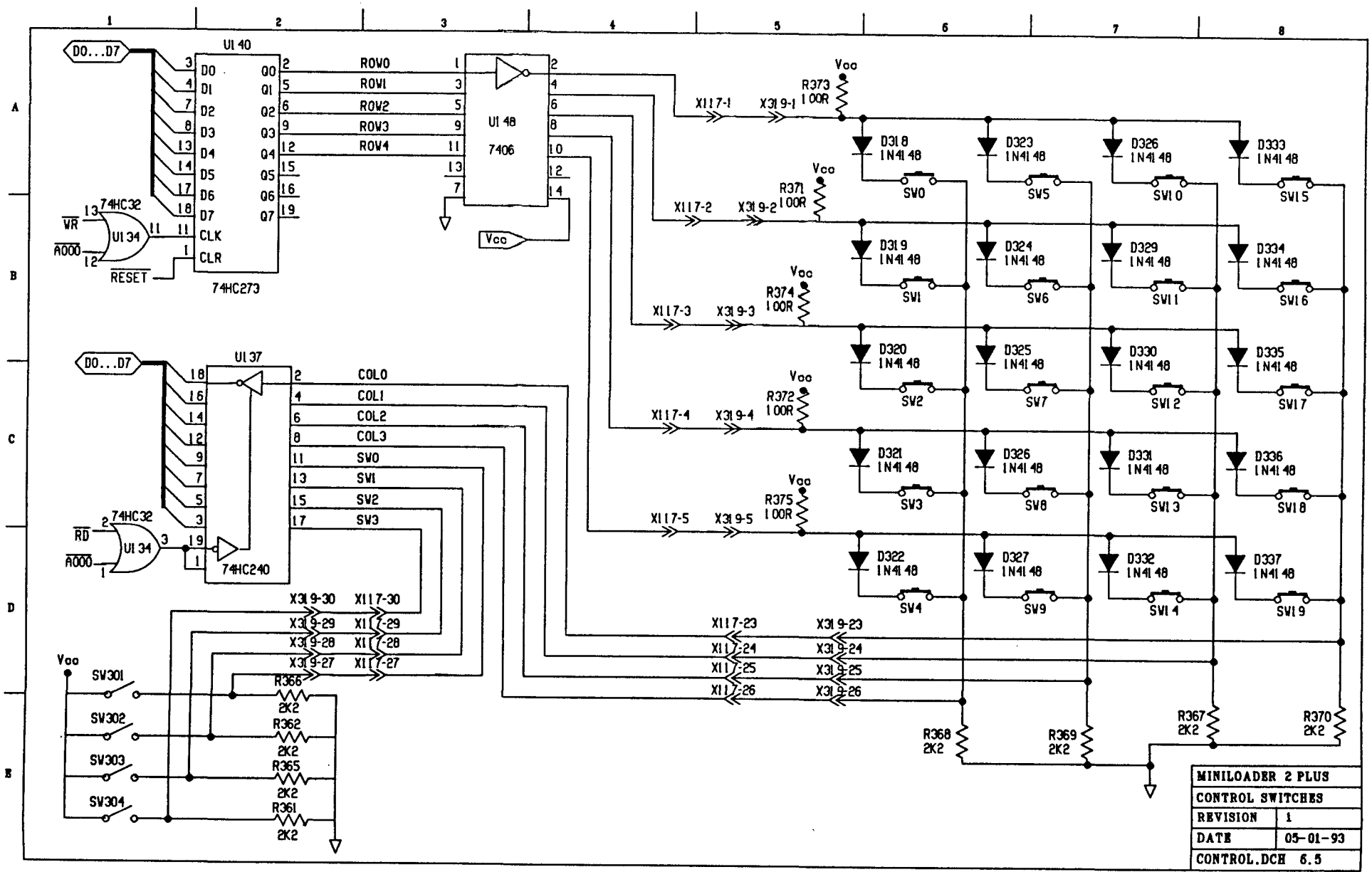
MINILOADER 2 PLUS	
RELAY DRIVERS 3 OF 3	
REVISION	1
DATE	23-10-92
REL_DRV3.DCH	6.5



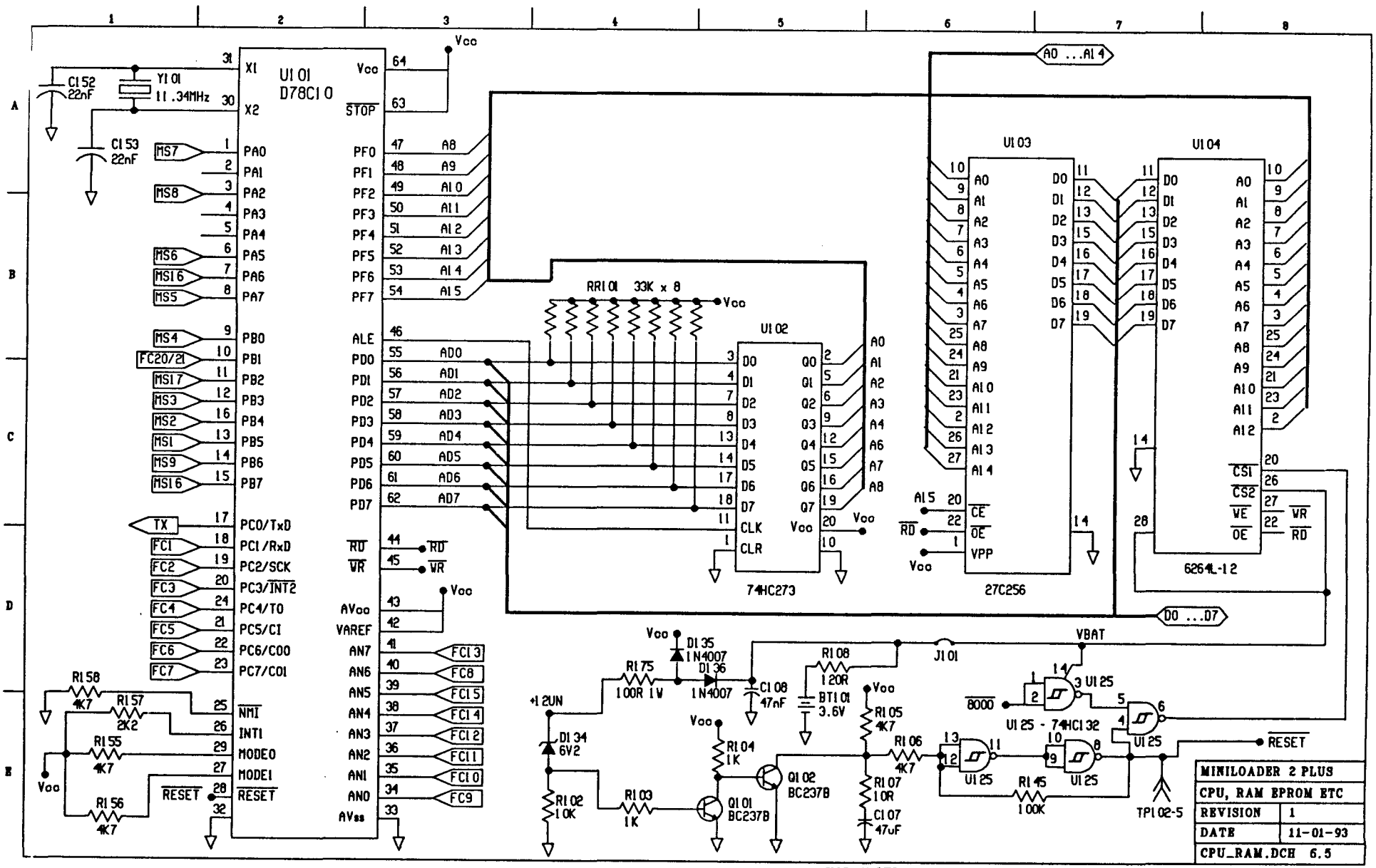
MINILOADER 2 PLUS	
SOLENOIDS & CLOCK	
REVISION	1
DATE	05-01-93
SOLENOID.DCH	6.5

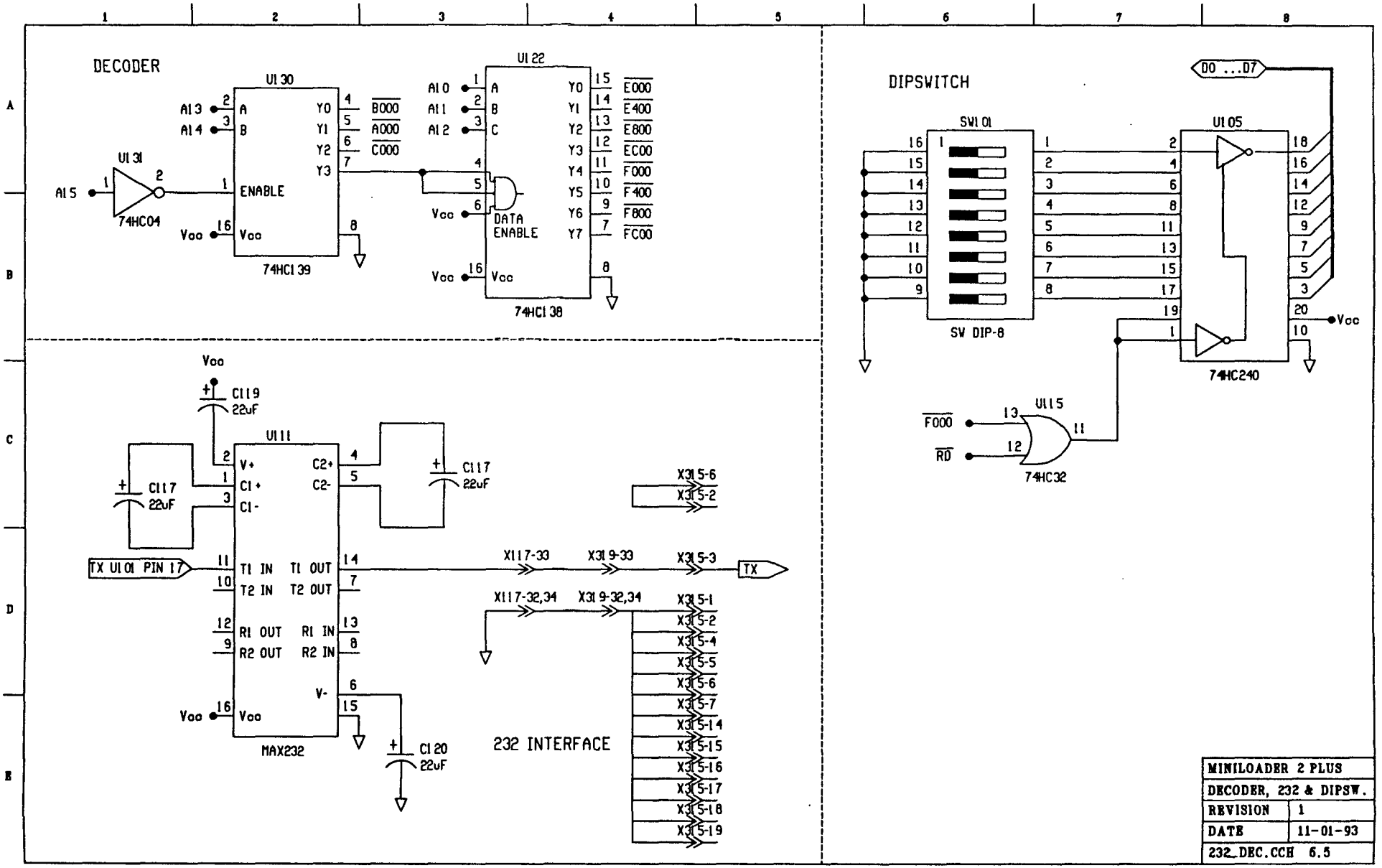

D0...D7
U140
74HC273
U139
74HC273
U138
74HC273
74HC32
U134
U121
WR
A000
B000
C000
D000
E000
RESET
CLK
CLR
D0
D1
D2
D3
D4
D5
D6
D7
Q0
Q1
Q2
Q3
Q4
Q5
Q6
Q7
U148
U147
U146
U145
7406
Vcc
X118-1
X317-1
X117-6
X117-7
X117-8
X117-9
X117-10
X117-11
X117-12
X117-13
X117-14
X117-15
X117-16
X117-17
X117-18
X117-19
X117-20
X117-21
X117-22
X319-6
X319-7
X319-8
X319-9
X319-10
X319-11
X319-12
X319-13
X319-14
X319-15
X319-16
X319-17
X319-18
X319-19
X319-20
X319-21
X319-22
R308 330R
R345 330R
R309 330R
R346 330R
R310 330R
R347 330R
R311 330R
R348 330R
R312 330R
R349 330R
R313 330R
R350 330R
R314 330R
R351 330R
R352 330R
R354 330R
R353 330R
FC1
FC2
FC3
FC4
FC5
FC6
FC7
FC8
FC9
FC10
FC11
FC12
FC13
FC14
FC15
EN0
EN1
D301
D308
D302
D309
D303
D310
D304
D311
D305
D312
D306
D313
D307
D314
D315
D316
D317
R153 10K
R154 330R
Q102
BC237B
X117-31
X319-31
X318-1
X318-2
+12V UN
COUNTER
MINILOADER 2 PLUS
LED DRIVERS & COUNTER
REVISION 2
DATE 08-02-93
LED_DRV1.DCH 6.5


RR104 2K2 x 8
RR103 2K2 x 8
RR102 2K2 x 8
Vcc
U107
U106
U105
74HC273
74HC240
74HC32
U116
U115
D0...D7
WR
F000
RD
RESET
STEP-BY STEP
X103-1
X103-2
DISPLAY DIS201
X116-27 to 30
X201-27 to 30
X116-31 to 34
X201-31 to 34
U201 7805
+12UN
IN
OUT
GND
C201
220uF 25V
C202
1uF 35V
C203
100nF
X206-2
X206-1
X402-2
X402-1
X208-1
X207-1
X208-2
X207-2
R401
330R
R402
330R
R403
330R
R406
33R
R405
33R
R404
33R
Q401
Q402
Q403
BC546B
D403
HLPM-2685 RED
D402
HLPM-2785 YELLOW
D401
HLPM-2885 GREEN
R201
330R
Q201
BC237B
BUZZER
X204-1
X204-2
X203-1
X203-2
X203-3
X401-1
X401-2
X401-4
SERIAL MODE
SIZE CHANGE
EJECT
18 x 24 MAG FORWARD
LOAD CONTROL
RESET
X205-7
X205-2
X205-4
X205-5
X205-3
X205-1
X205-6
OUT0
OUT1
OUT2
OUT3
OUT4
OUT5
OUT6
OUT7
OUT8
OUT9
OUT10
OUT11
OUT12
OUT13
OUT14
OUT15
STEP
IN0
IN1
IN2
IN3
IN4
IN5
IN6
MINILOADER 2 PLUS
DISPLAY, KEYPAD & LED
REVISION 2
DATE 27-04-93
DISPLAY.DCH 6.5



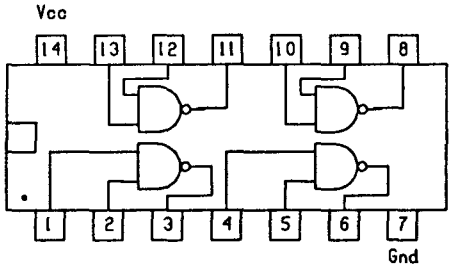
MINILOADER 2 PLUS	
CONTROL SWITCHES	
REVISION	1
DATE	05-01-93
CONTROL.DCH 6.5	


U101
D78C10
C152 22nF
C153 22nF
Y101 11.34MHz
XI
X2
STOP
Vcc
PA0
PA1
PA2
PA3
PA4
PA5
PA6
PA7
PB0
PB1
PB2
PB3
PB4
PB5
PB6
PB7
PC0/TxD
PC1/RxD
PC2/SCK
PC3/INT2
PC4/T0
PC5/CI
PC6/C00
PC7/C01
NMI
INT1
MODE0
MODE1
RESET
PF0
PF1
PF2
PF3
PF4
PF5
PF6
PF7
ALE
PD0
PD1
PD2
PD3
PD4
PD5
PD6
PD7
RD
WR
AVcc
VAREF
AN7
AN6
AN5
AN4
AN3
AN2
AN1
AN0
AVss
MS7
MS8
MS6
MS16
MS5
MS4
FC20/21
MS17
MS3
MS2
MS1
MS9
MS16
TX
FC1
FC2
FC3
FC4
FC5
FC6
FC7
FC13
FC8
FC15
FC14
FC12
FC11
FC10
FC9
A8
A9
A10
A11
A12
A13
A14
A15
AD0
AD1
AD2
AD3
AD4
AD5
AD6
AD7
RR101 33K x 8
U102
74HC273
U103
27C256
U104
6264L-12
A0 ...A14
D0 ...D7
R158 4K7
R157 2K2
R155 4K7
R156 4K7
R175 100R 1W
D135 1N4007
D136 1N4007
C108 47nF
R108 120R
BT101 3.6V
J101
VBAT
+12UN
D134 6V2
R102 10K
R103 1K
R104 1K
Q101 BC237B
Q102 BC237B
R105 4K7
R106 4K7
R107 10R
C107 47uF
8000
U125 - 74HC132
R145 100K
TP102-5
RESET
MINILOADER 2 PLUS
CPU, RAM EPROM ETC
REVISION 1
DATE 11-01-93
CPU_RAM.DCH 6.5

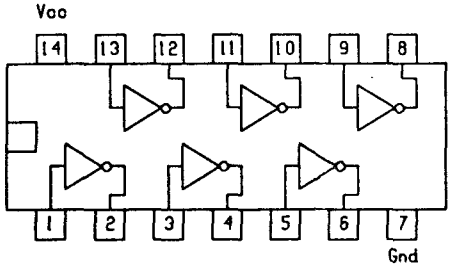


MINILOADER 2 PLUS	
DECODER, 232 & DIPSW.	
REVISION	1
DATE	11-01-93
232_DEC.CCH	6.5

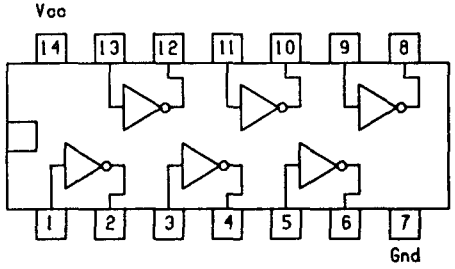
74LS00 QUADRUPLE 2-INPUT NAND GATE



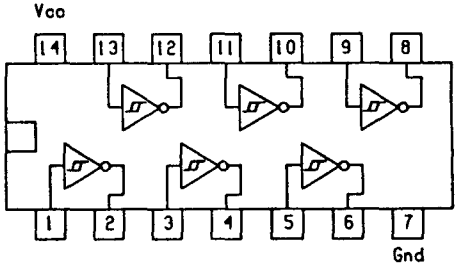
74HC04 HEX INVERTER



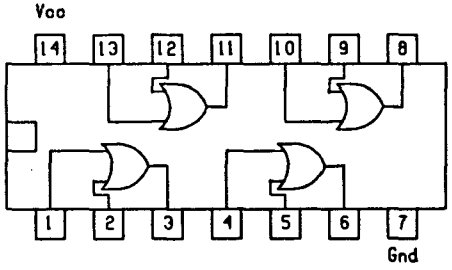
74HC06 HEX INVERTER WITH HIGH VOLTAGE OPEN COLLECTOR OUTPUTS



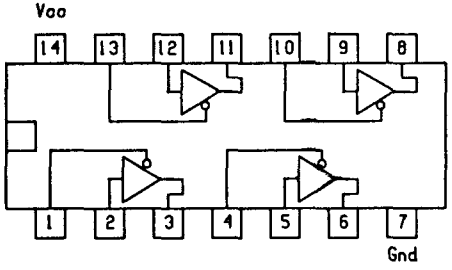
74HC14 HEX SCHMITT TRIGGER



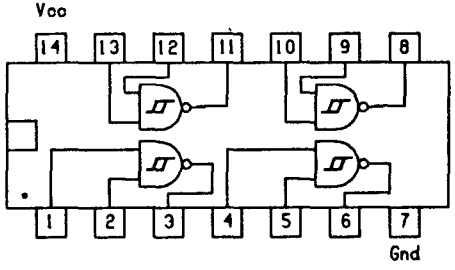
74HC32 QUAD 2-INPUT OR GATE



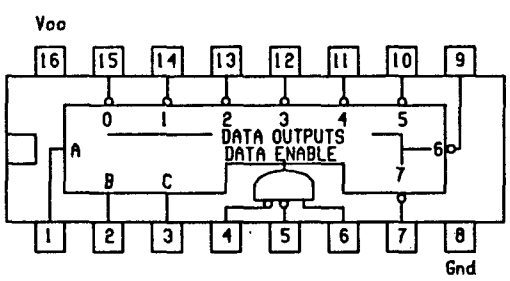
74LS125 QUAD 3-STATE BUFFER (ACTIVE LOW ENABLE)



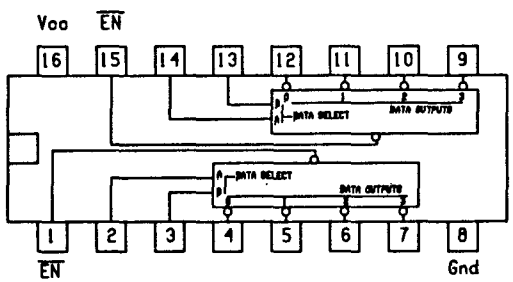
74HC132 QUAD 2-INPUT NAND SCHMITT GATE



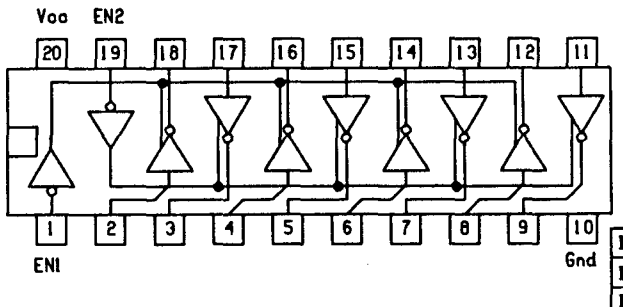
74HC138 3 TO 8 LINE DECODER/MULTIPLEXER



74HC139 DUAL 1 OF 4 DECODER

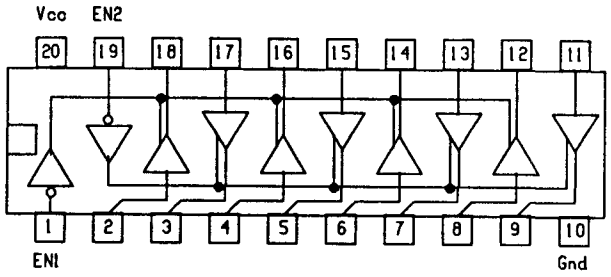


74HC240 OCTAL BUFFER - 3 STATE INVERTING

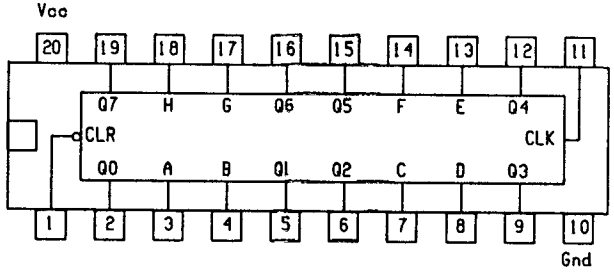


MINILOADER 2 PLUS	
IC'S 1 OF 3	
REVISION	1
DATE	11-01-93
CHIPS_1.DCH	6.5

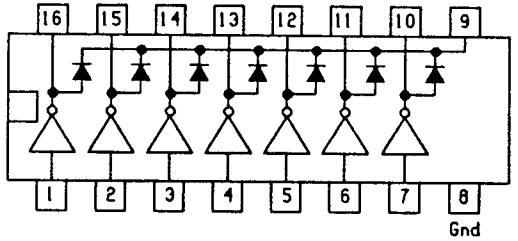
74HC244 OCTAL BUFFER - 3 STATE NON-INVERTING



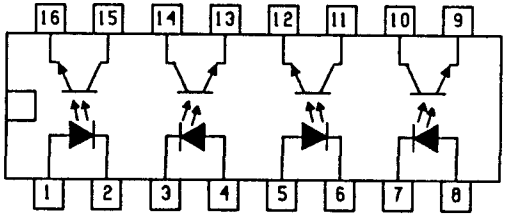
74HC273 8-BIT REGISTER WITH CLEAR



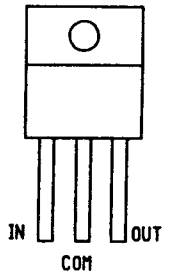
ULN2003 7 STAGE DARLINGTON DRIVER



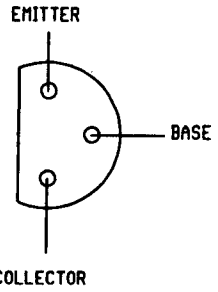
ISQ202 QUAD OPTO-ISOLATOR



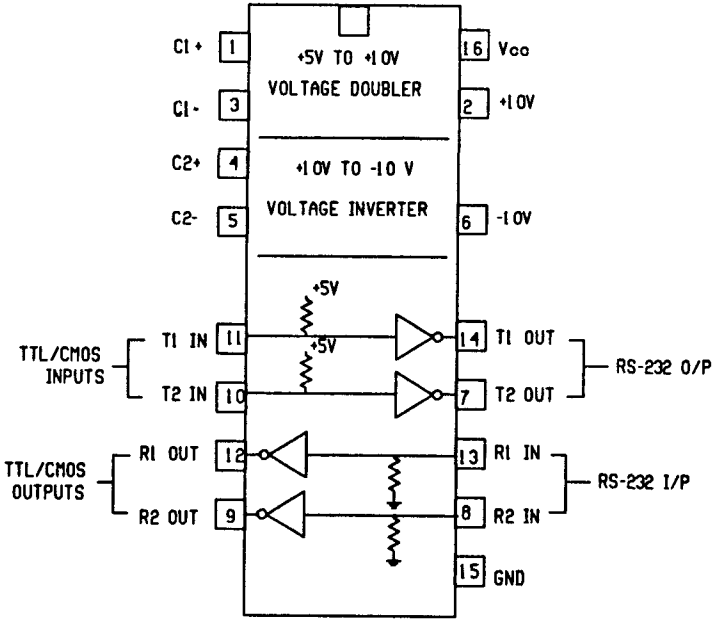
7805 5 VOLT REGULATOR
7812 12 VOLT REGULATOR



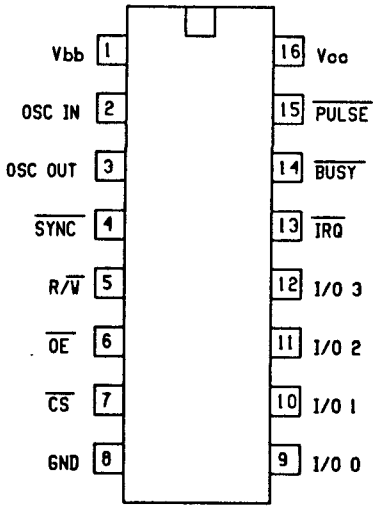
BC237B NPN TRANSISTOR
BC547B NPN TRANSISTOR



MAX 232 +5V POWERED RS232 DRIVER/RECEIVER

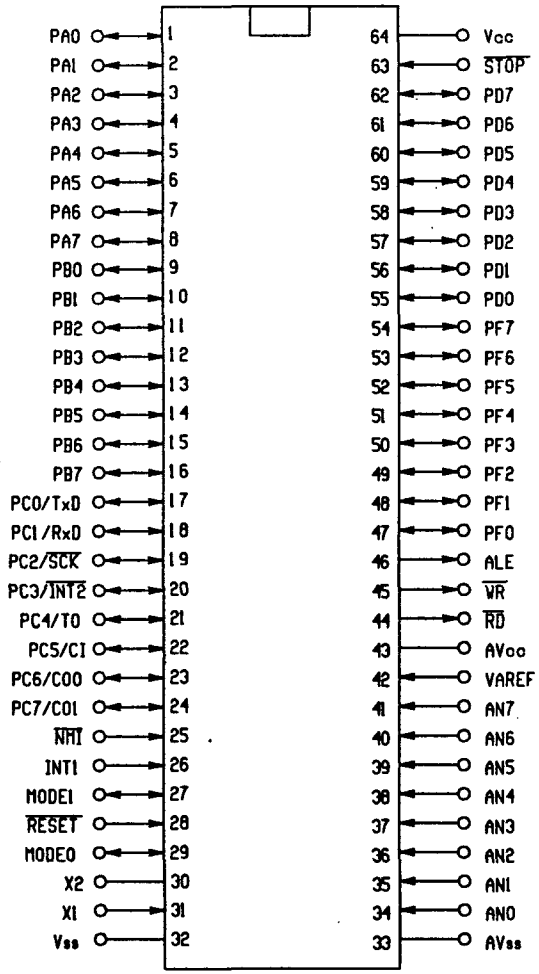


M3002 CLOCK CHIP

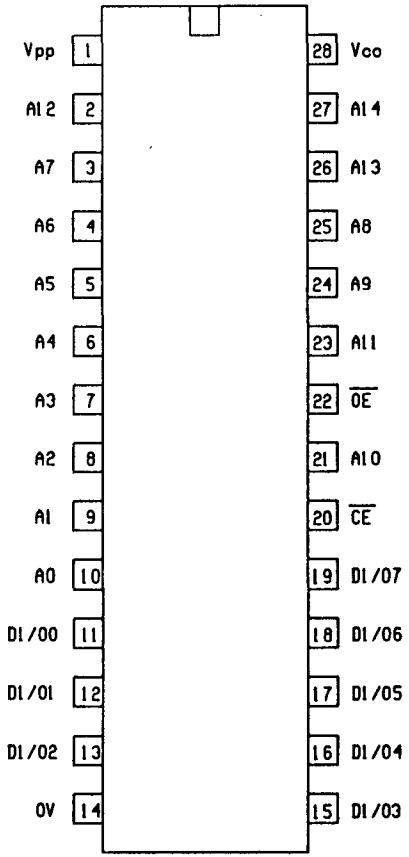


MINILOADER 2 PLUS	
IC'S 2 OF 3	
REVISION	1
DATE	12-01-93
CHIPS_2.DCH	6.5

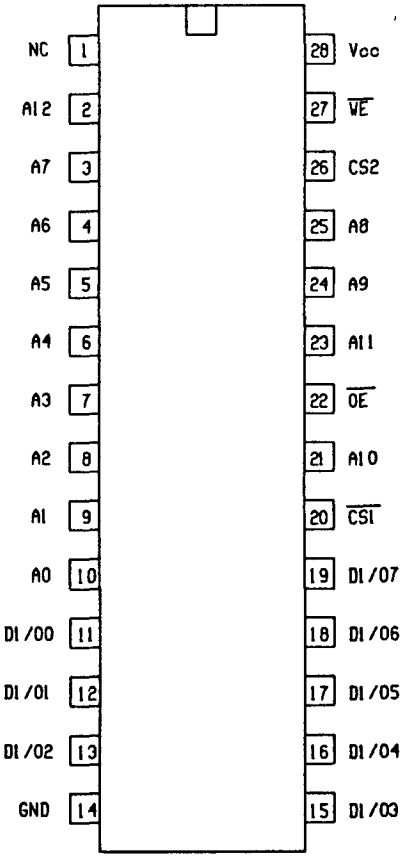
MICROPROCESSOR PD78C10A



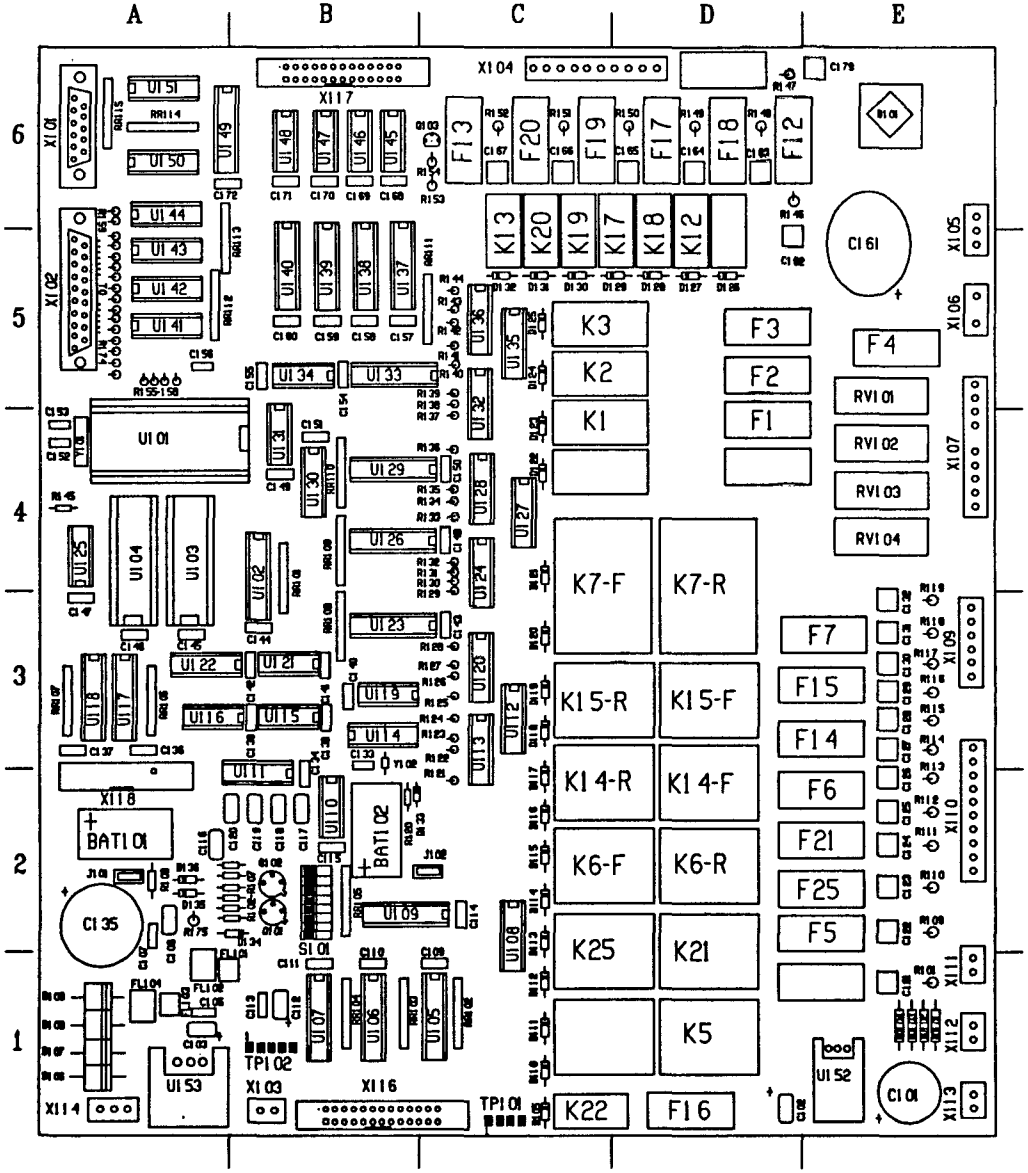
EPROM D27C256-2



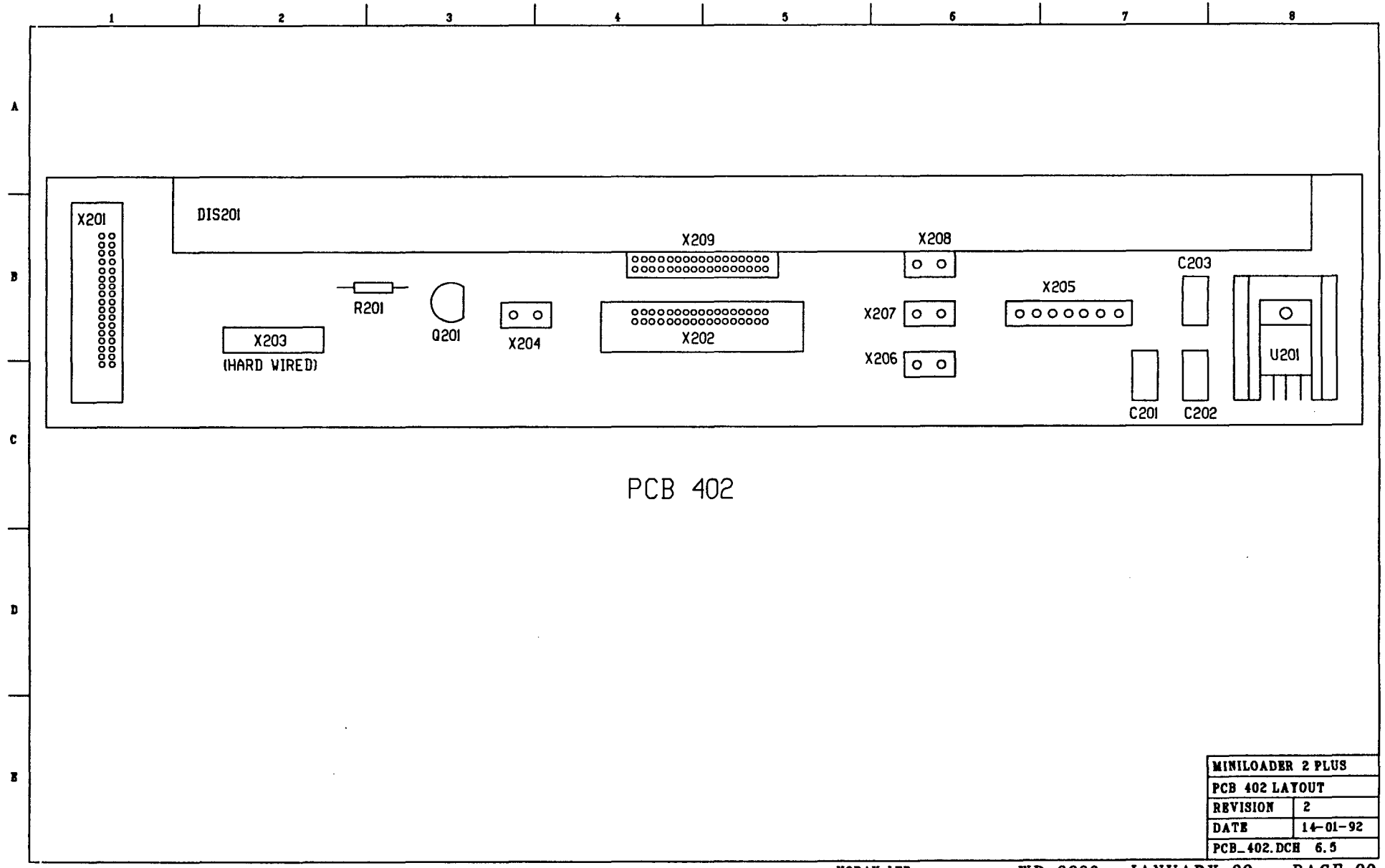
RAM 6264L-12



MINILOADER 2 PLUS	
IC'S 3 OF 3	
REVISION	1
DATE	12-01-93
CHIPS_3.DCH 6.5	

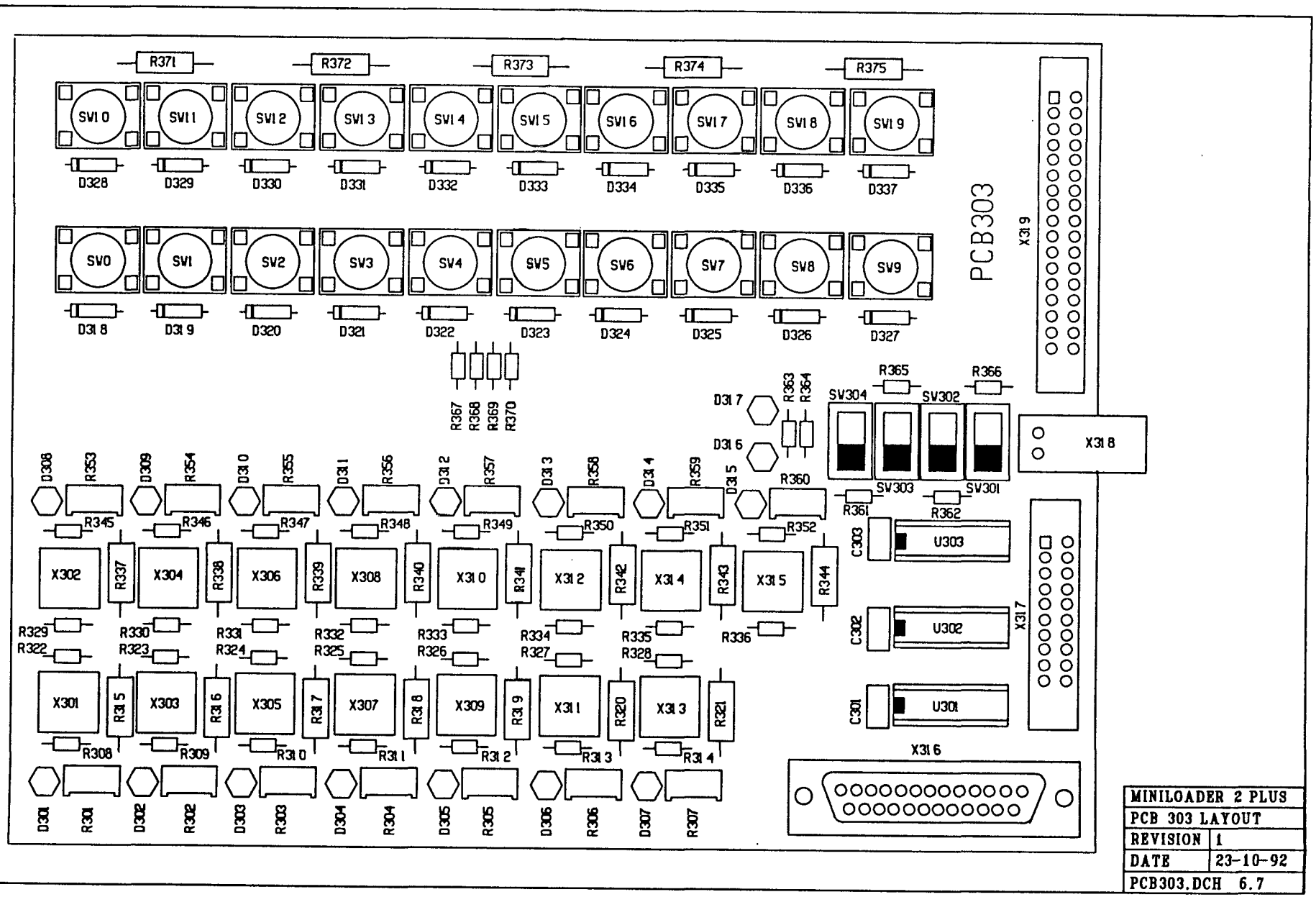


MINILOADER 2 PLUS	
PCB 301 LAYOUT	
VERSION	2
DATE	14-01-93
PCB303.DCH	

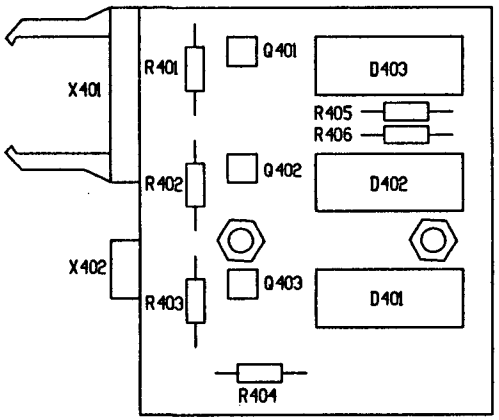


PCB 402

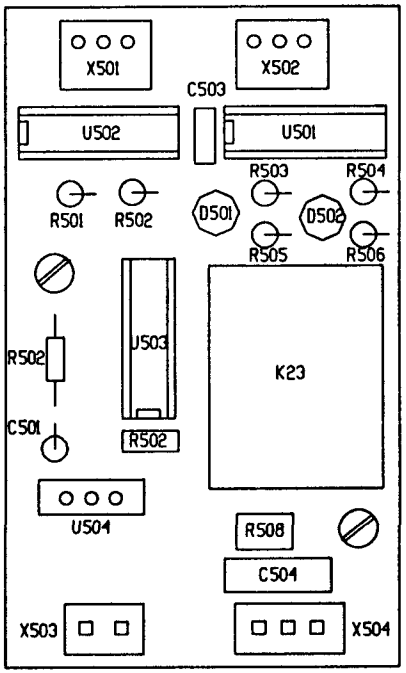
MINILOADER 2 PLUS	
PCB 402 LAYOUT	
REVISION	2
DATE	14-01-92
PCB_402.DCH	6.5



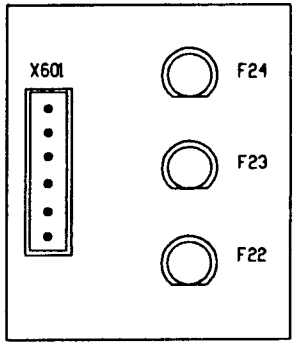
MINILOADER 2 PLUS	
PCB 303 LAYOUT	
REVISION	1
DATE	23-10-92
PCB303.DCH 6.7	



PCB 204



PCB 205



PCB 206

MINILOADER 2 PLUS	
PCB'S 204, 205 & 206	
REVISION	1
DATE	14-01-93
PCB205_6.DCH	6.5

Publication Change Notice Table

Rev. Date	PCN No.	Pub.No.	Affected Pages	Description
January 93	1	30080006	All	Complete updating of all pages, new style drawings showing all interconnections between PCB's introduced.

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HEALTH SCIENCES DIVISION

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